

ESSENTIALS of DESIGN



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ESSENTIALS OF
DESIGN



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ESSENTIALS OF DESIGN

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With numerous
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Museum of Art.

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PREFACE

MORE and more we are coming to an appreciation of the importance of art as a controlling factor in industries in which design is involved, as well as in households which are interested in the products of such industries as contribute articles of usefulness for homemaking. Industry is interested in art from the commercial side primarily, and it seeks to obtain designers, artificers, and artisans who can produce salable products. Manufacturers hesitate to place on the market products that may not appeal to the average buyer. They fear lest they overreach the public taste; consequently, they frequently decline to put on the market some of the best designs that their trained designers have produced.

The household is interested in art from the utilitarian and decorative side, and it seeks to employ art in producing beautiful homes, beautiful furnishings, utensils, and clothing. To the modern household the selection and arrangement of manufactured products in the home is of the utmost importance, and it is, therefore, with the setting up of æsthetic ideals by which articles may be judged, that the householder is concerned. He often regrets that many of the best designs turned out by the designers must be rejected or ruined by modification in order to meet the requirements of manufacture by modern, mechanical means. Often, too, the house-

holder finds that industry is producing articles which are not acceptable to him because they do not fulfill his artistic ideals, yet they are sold in large numbers. It is becoming apparent that the problem of producing objects for the home that shall be artistic, utilitarian, and yet producible in large numbers by mechanical means can be solved only through education of the public through the schools and in the industries themselves.

This book sets forth some of the major elements that are deemed essential to satisfactory design both in industrial and in household arts. It is intended as a textbook for schools and as a book for the general public, which shall help the reader understand the reasons why a design is in itself beautiful or not, and why, under given conditions of arrangement, it is in good or in bad taste. Principles are emphasized because, while it is desirable to know whether an individual object is beautiful or not, it is better to know what are the basic principles by which all objects may be judged. If this volume points the way to securing an artistic standard, then it shall have achieved its purpose.

The authors have been encouraged in presenting these views by the interest shown by those who read the manuscript. They are grateful to Mr. Richard F. Bach of the Metropolitan Museum of Art and Mr. Ray Greenleaf of Artemas Ward, Inc. for helpful suggestions.

CHARLES DE GARMO
LEON L. WINSLOW

NOVEMBER 15, 1923.

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Essentials of Design

CHAPTER ONE

ANCIENT AND MODERN CONCEPTIONS OF INDUSTRIAL ART

The Greeks, in the age of Pericles, assumed that beauty comes from the impersonal qualities of objects themselves and not from any reflection of the individuality of the artist. They laid chief stress upon such characteristics as symmetry, rhythm, and harmonic relations in the structure and arrangement of parts and in their final coördination into an artistic unity. Modern theory beginning with the Renaissance has added the new idea that a work of art should also be an expression of the thought and emotion of the artist. In other words it maintains that a worthy art product owes its beauty not only to its qualities as an object but also to the fact that it reflects or reveals the personal artistic character of its maker. So far has this new notion been carried that some so-called products of modern art have merely revealed the artist's personality, including not only his fancies and inspirations but even his caprices and peculiarities.

That this new idea has been important and, on the whole, beneficial in modern painting and sculpture

is perhaps beyond question; but it becomes confusing and misleading when used as a measure of the artistic worth of objects of utility.

From the primeval days when men first began to produce beautiful articles of utility down to the closing decades of the eighteenth century, the hand furnished the power and guided the tool that fashioned the thing to be produced. This period was so long that it might well be regarded as a not insignificant section of time. But with the invention of the steam engine a world-transforming influence began to operate. The motive forces of nature were destined to take the place of hand power, the machine tool to displace the hand tool, and the craftsman's shop to disappear in the factory. These prodigious changes constitute what is called the Industrial Revolution.

Art as an expression of personality demands uniqueness. In machine-made products, however, the thousandth output has most if not all of the artistic merits and other characteristics of the first. Before machines were invented, the craftsman could apply the new aesthetic ideal of personality in art to the making of objects of utility, for uniqueness could still be obtained in decoration if not in construction. Every object could, to some extent at least, reflect the skill, insight, and even the emotions of the maker. The real difficulty of applying this new idea to industrial art became apparent only when hand manufacture began to be replaced by that of the machine, for it is a

peculiarity of the machine that what it makes once it must needs make many times. The artistic merits of its products, so far as the expression of personality is concerned, are confined to the original design. The uniqueness of this, however, becomes



Courtesy of Metropolitan Museum of Art

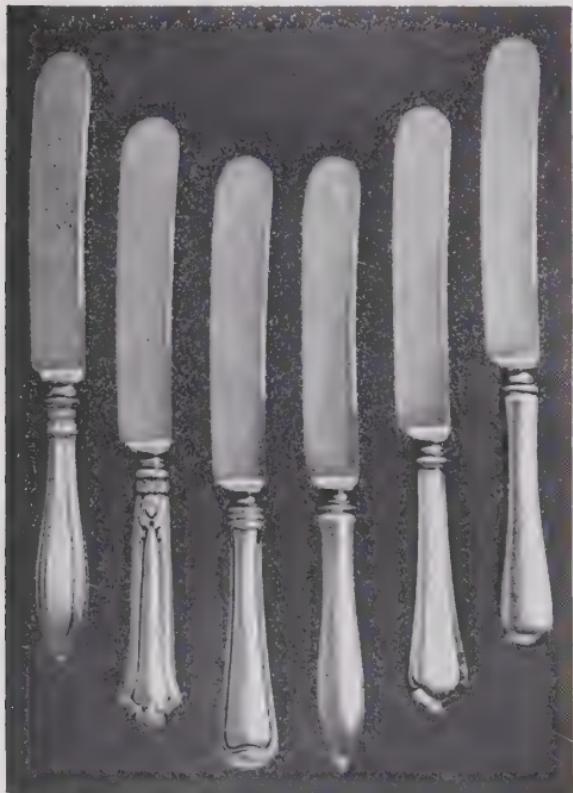
EARLY KNIVES AND FORKS

Here decoration is emphasized more than artistic shape

submerged in multiplication. For this reason the machine is a poor decorator. Though it is capable of executing any design the mind of man can furnish, it would be very expensive to invent and make a new machine for each newly conceived product.

An easy way out of the conflict between the ideal of individual expression furnished by the Renaissance and the new instrument of production furnished by the Industrial Revolution, the machine, is to deny

beauty to all articles of utility. But such judgment fails to conform to reality, for in spite of the scorn or indifference of those who find beauty in products of the so-called fine arts only, many machine-made articles obviously possess great beauty, though it is a beauty somewhat different in type



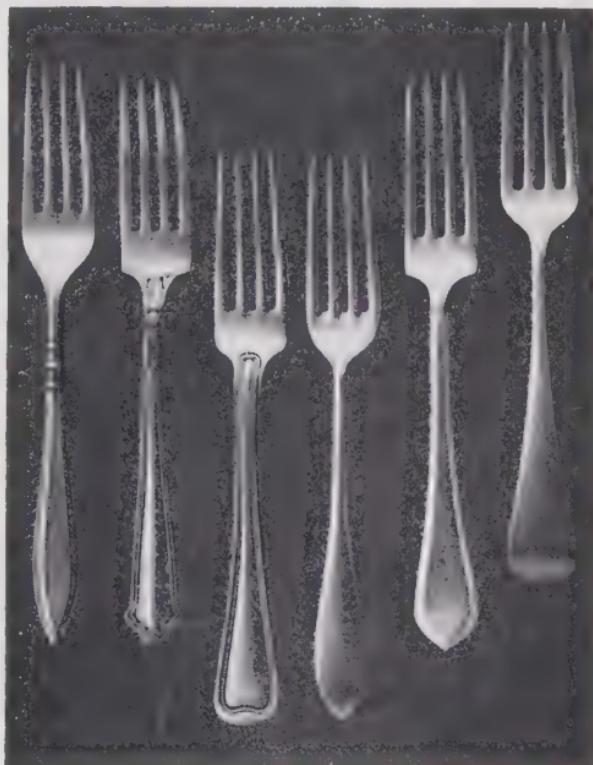
Courtesy of The Gorham Company
MODERN KNIVES

from that which formerly came from the craftsman's shop.

The present chapter treats of the artistic values that are to be found in the best hand work as contrasted with those to be found in the best machine-made prod-

ucts. Both have their excellences, but they differ in certain characteristics.

Our ideal of what constitutes artistic merit in an object of utility has, almost unconsciously to ourselves, undergone a radical transformation. Decoration and its consequent uniqueness of pattern which was considered first in the days of the craftsman of the Middle Ages is now considered secondarily or not at all. What person of good taste, for example, now selects ornately-decorated table silverware or furniture? He thinks first of



Courtesy of The Gorham Company
MODERN FORKS

its form, the adequacy of its materials, the elegance of finish, the fitness to a given situation. Only secondarily does he think of decoration, which, if present, must be chaste and unobtrusive, while the uniqueness of decoration or of shape is scarcely con-

sidered at all. The ground for this conviction that adaptation of shape to purpose comes before even the most beautiful decoration lies in the fact that, while the machine is incomparable in power of construction, it is limited in its capacity to decorate.

To compare the importance of form for articles of utility now and in the much-praised times when the artisan was conceded to be an artist, examine the knives and forks of the earlier age and those of the present time (pages 3, 4, and 5). Here it may be seen that the emphasis was formerly placed upon ornamentation rather than upon shaping the article to accord with its use. The ivory handles of these utensils were even carved with human forms, but the blades of the knives were such as are now used in kitchens, and the fork tines are suggestive of pitchforks. In like manner compare the old-fashioned spoons of the former age (page 7) with the delicately shaped ware of the present (page 9). Many harsh things have been said about the artistic qualities of this "machine-made age," but if it has done nothing else, it has at least taught us the aesthetic value that lies in shape ideally adapted to use.

Ruskin and Morris¹ appear not to have considered seriously this shift of artistic values from decoration to shape that machine manufacture effected, perhaps because they were too impatient with the crude products of the earliest factories, which sacrificed the good

¹ John Ruskin, 1819-1900, English art critic of Scotch birth; William Morris, 1834-1896, English poet, artist, and shopkeeper.

of the old methods without at the same time revealing the artistic possibilities of the new. But now the shift is obvious to all. The predecessor of the modern piano,



Courtesy of Metropolitan Museum of Art

EARLY SPOONS

Contrast these with the spoons on page 9.

for instance, was the tinkling spinet or harpsichord with curved legs and an insignificant body resplendent with gilt and painted decoration. The new piano is content to house its magnified musical worth in a frame whose claims to beauty are faultless proportion and the rich,

soft finish of precious woods. Each individual may decide for himself which he prefers, but in expressing his preference he should recognize that he is deciding between two relatively distinct periods, an era that depended for the most part upon decoration for artistic effect and an era that finds its artistic values mostly in faultless shape and finish. Modern taste evidently prefers a spoon whose form is perfect for conveying liquids to one that can do this only with difficulty, even though elaborately ornamented. The form of a goddess or of an apostle skillfully carved in ivory may be in itself an admirable piece of artistic expression, but why should such an image constitute the handle of a knife? Is it not a species of desecration to use it for such a purpose? Such forms should appropriately be held in our hearts rather than in our hands.

It may be thought by some that the change in ideals suggested has been due to fashion and that we are therefore liable to slip back to the old order. But such a reversal is most unlikely; first, because machine manufacture is a permanent acquisition since it saves man's labor, promotes his economic well-being, and raises his standards of living; and, second, because elaborate decoration is foreign to the very nature of utility. Form or shape, as we shall see, is the true correlative and condition of beauty in useful things, for this alone, when embodied in adequate materials, enables an object best to fulfill its purpose. What animate body is there that has not been shaped in limb and feature by the

functions which it must perform? What mechanical instrument ever attained its highest usefulness until its shape answered perfectly to its use? Is it not in accord with the nature of things that our ideals should harmonize with the fact that the chief function of useful things is the effecting of purpose, rather than the expression of ideas or emotion?

In the time of the hand tool, when decoration was considered first, useful art was but an appendix and a faint reflection of isolated or so-called fine art; but now that the old order has passed, attainable beauty in articles of utility must be sought where it naturally belongs; namely, in the qualities of the things themselves, as the Greeks maintained so long ago. Were personal expression the whole of art, we might have



Courtesy of The Gorham Company

MODERN SPOONS

In these designs decoration is subordinated to beauty of shape.

to exclude beauty from utility. But there is no need to count the useful as among the lost arts, for all that belonged to them before the Renaissance is still theirs. The final result is that the machine, which at first seemed to threaten the very existence of beauty in the useful arts, has at last brought back to them their true aesthetic value, the natural beauties of shape that arise when form is in perfect accord with function and when material and finish and chastened decoration are fair because they are fitting.

Isolated art is personal and individual, while the useful arts are impersonal and universal. An artist paints a picture but once ; if he wishes to go on painting, he paints a different subject. The designer of a useful product, however, desires nothing so much as its multiplication for sale. In certain respects the craftsman of the age of the hand tool practiced an isolated art. His work was partly personal and individual, as when he carved an original decorative pattern on a single article of utility ; but when he became a manufacturer producing many products from a single design, he did exactly what the machine now does, only more slowly and with less exactness. Some may assert that this very inexactness was an artistic merit in that it varied with each thing made and, therefore, marked each product with individuality ; but to accept this would be to base artistic excellence on imperfection, which would be a hazardous doctrine.

Ruskin and Morris laud the craftsman as an artist-



Courtesy of Longmans, Green and Company

SHERATON FURNITURE

artisan, and they seem to assume that he was both designer and manufacturer. At times and in some arts this was doubtless a fact, but that it was always or even usually so may be questioned.

Consider, for example, the illustrations of Sheraton chairs (pages 11 and 13). All of these chairs were made by hand. It might be assumed that each was made by a different workman who both invented the design and built the chair, but a moment's thought will show this assumption is incorrect at least so far as the design is concerned. One mind designed all these chairs, together with other similar ones. That is why they bear the name of Sheraton. Many hands were doubtless busy in their construction. It is possible that a single workman sometimes made a complete chair, though it must be remembered that even these early craftsmen understood the economic advantage of division of labor. It may seem, therefore, that in this case a condition existed not unlike that obtaining in a modern factory, for we find present the same two agencies of production, a master designer and many workmen, the difference consisting in that the modern cabinetmaker uses machines for shaping, joining, and polishing the wood. In other words he has better tools than he once had and a far more potent motive-force than exists in his own arm. Sheraton chairs are now reproduced by the thousand in American factories; as far as shape is concerned, they may be exact duplicates of the originals.

What shall be said, therefore, of the assumption even if not the assertion of Ruskin and Morris that the machine destroys both the artist and his art? So far as the designer is concerned, the assumption has no validity whatever, for he is the same individual in both instances, whether hand or machine tools are used. As far as the art has to do with use-accordant shape, the assumption is false, for the workman can now make with machines the same forms that he once



Courtesy of Metropolitan Museum of Art
SHERATON ARMCHAIR

fashioned with cruder tools impelled by hand. Wherein, it may be asked, was the foot lathe better than the lathe now driven by water, steam, or electricity?

As far as the decorative side of the art is concerned, there is a difference, for uniqueness of design must be at least partially lost by reproduction. Fortunately

this loss is made good by the fact that the ideals of beauty have shifted from the emphasis on decoration to an emphasis on form and fitness according to function. The loss to the artist as a workman is in two particulars ; first, in that the division of labor in the factory is much greater than it was in the craftsman's shop so that the worker now usually confines his attention to a small part of a complex product whereas he once made the whole or a considerable portion of it ; second, in that he loses the inventive stimulus that individual decoration furnished. These losses to the workman are undeniable and, were there not compensating economic advantages, they would be deplorable.

The joy that comes of doing creative work in any of its aspects is a precious thing and should not be lightly cast aside ; but revolutions in industry and the consequent changes in æsthetic ideals are inevitable and irrevocable. We may indeed lament the loss of ancient good and even desire a return to the more primitive ways ; but the world does not reverse its movement in art any more than in industry, so that it would at least seem the part of wisdom to accept what is and to seek to realize our ideal of art ever in new ways.

Responsibility for the production of inartistic products in the modern factory is divided, and like all divided responsibility it has produced results that are difficult to reform. In its early days the factory rather naturally tried to reproduce cheaply with what exactness it could forms and decorations that had originated in the crafts-

man's shop. The first results were often anything but artistic, and they brought down upon themselves the denunciation of Ruskin and of Morris, for the factory produced not the cheap and beautiful, but what Morris called "the cheap and nasty."¹ The blame for this state of affairs is to be ascribed, first of all, to the designer who created patterns that the machine even in its present perfection could not successfully carry out; namely, designs that involved the most individual features of the craftsman's art. Then too, in those early days the machines were crude and the operatives untrained in their use.

The ugly in machine-made products is still with us as may be seen by a glance into the catalogues of almost any of the popular mail-order houses or of those of the factories that cater to them. Who or what is responsible? The manufacturer and merchant are still obsessed to some degree by the idea that nothing can be beautiful that is not ornate, although there are evidences all about us that the public in general desires better products than are now provided. Hence the manufacturer who feels he must sell though the artistic heavens fall still persists in setting his machines to doing what they never have been able to do well, that is, to producing intricate and overelaborate decorations. What is needed most is fuller art education of the public and an enlightened conscience in manufacturer and seller.

That the machine of to-day and its operators are

¹ Morris, William: *The Decorative Arts*.

not responsible for inartistic products may be demonstrated by a visit to the nearest department store; for there one will find furniture of the most admirable form and finish, shoes far superior to any that craftsmen ever produced, silverware faultless in shape and guiltless of overdecoration, textiles in bewildering array and of exquisite color, pattern, and texture, and china that charms the eye with its shapes and delights the soul with its decoration. Manifestly, the modern factory is capable of producing artistic products of the highest æsthetic merit.

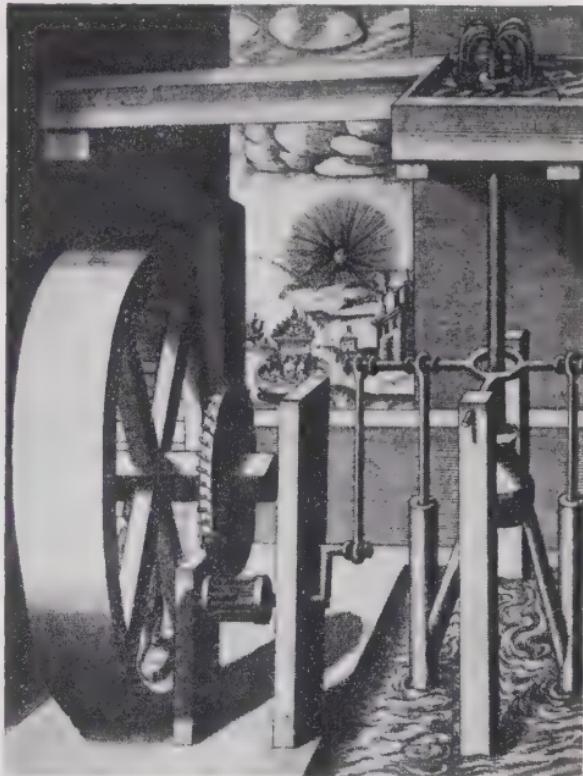
A century has done much towards securing recognition for the artistic possibilities of the machine. Once the world of culture condemned utterly whatever the machine produced; now even the most discriminating homes welcome products of the machine. Everybody accepts its best furniture while almost none demands anything in this line from the craftsman; the machine-made shoe has no rival; the potter's wheel has become the parent of the jigger; the hand loom has disappeared, except for a few special fabrics. Articles of utility that are not now made by machinery are few and hard to find.

Did beauty of design go out when the machine came in? Decidedly not, except for those whose artistic appreciation is ill founded, for beauty is still with us in profusion even though it does employ a somewhat different means and assume new values.

That the modern designer at his best is also an artist

is abundantly demonstrated in many factory products such as silver, glass, chinaware, textiles and garments, shoes, hats, and gloves, fine furniture, tools, scientific instruments, and even the automatic machines themselves. There is hope, moreover, that the designer may yet become an artist in all fields of manufacture. Three potent influences are constantly at work to bring about this result: (1) a wide choice of materials, (2) the possibility of obtaining machines that will produce any desired shape to any required degree of accuracy, and (3) higher artistic ideals through art education in the schools.

To get an idea of how far the designer may go in securing artistic excellence in machinery, it will be well



MAN-DRIVEN OR TREAD-MILL PUMP

A type of machinery of the sixteenth century. Note the decorative landscape seen through the opening in the background.

to note how far he has come since the sixteenth century. The accompanying illustration of the man-driven pump (page 17) is typical in showing the degree of mechanical excellence of that period in material and design. The cogs are wooden pegs set into holes bored in the rim of the wheel, while the gears on the pinion are horizontal rods. The motive power is the weight of a man who travels about the inside of the rim of the large wooden drivewheel like a squirrel in his cage. The pump itself is of the crudest and most ineffective nature, for most of the force exerted by the man is expended in friction. Nothing, it would seem, could be more inadequate as a pump.

The modern designer differs from his mediæval predecessor in several important particulars. First, he has a wide choice of materials: if wood is too bulky or too weak, he may use cast iron; if this is too brittle or too clumsy, he may select wrought iron; should this prove too soft, he has at hand steel in its various forms—Bessemer steel, nickel steel, tool steel, chrome steel, vanadium steel; if steel is too heavy, he may be able to substitute aluminum or one of its alloys. The same is true of other metals. In the olden times there was no such profusion of materials nor could they have been worked advantageously with hand tools even if there had been.

Second, the designer has now the use of hundreds of automatic and semiautomatic machines, accurate often to the ten-thousandth of an inch, with which to

shape his materials according to the use that is to be made of them. Observe the works of a watch and imagine what the machines must be to make them. With materials adequate to any use and machines to shape those materials in accordance with the most intricate design, the designer is free to plan his product. Nothing further is needed for artistic results but an ideal of what is most beautiful for the object of utility and an effort that shall be in accord with the ideal.

Third, the modern designer has within easy reach a scientific and an artistic education. The scientific education includes a knowledge of the evolution of all known machines for effecting the end the designer has in mind. This knowledge at once emancipates him from the tendency to shape a product with a new principle in imitation of some earlier product with a different principle. In other words, mechanical limitations no longer force him to seek beauty by making a thing look like something else. If he imitates old forms at all, he does so consciously and from psychological rather than from mechanical motives. One instance of the attempt springing from psychological motives to make a new thing resemble something else is the effort to make the interiors of steel Pullman cars look like wooden ones. It is probable that the designer of the first steel cars thought the passengers would feel uneasy unless the interiors were painted to imitate rose-wood or mahogany.

Such motives are usually as futile as they are short-

lived. Steel will eventually acknowledge itself to be steel we hope, if only for the added feeling of safety it imparts. The artistic education of the designer requires him to make each new product true to its functions and materials from start to finish. This training based upon wide reading and observation includes a knowledge of the evolution of industrial art, together with the knowledge of the materials and agencies that have enabled artists of the past to unite beauty and utility. These two principles of education teach the designer to avoid those forms of decoration for which a machine is unfitted and to develop beauty of shape that will be at the same time perfectly adapted to highest efficiency in use.

QUESTIONS AND EXERCISES

- (1) Compare a decorated with an undecorated vase, reading in this connection Keats' *Ode to a Grecian Urn*.
- (2) If convenient, bring to class examples of old-fashioned silverware and compare these, in respect to form and decoration, with the modern knives, forks, and spoons illustrated.
- (3) To-day table silver is shaped in steel dies a full set of which may cost from thirty to forty thousand dollars. What influence do you think this would have on the art quality in modern silverware? (See Richards: *Art in Industry*, p. 154. The Macmillan Company.)
- (4) Considering the heating apparatuses and the utensils used, compare the cooking and baking equipment of to-day with that of a hundred years ago with respect to shape and adaptation to purpose. Read in this connection Longfellow's

Hanging of the Crane and Whittier's *Snow-Bound*. What has been gained and what lost because of the changes brought about by the improved equipment?

(5) Compare some specific articles of individual craftsmanship with corresponding products of modern manufacture, appraising their comparative merits of design. Seek examples in furniture, textiles, pottery, jewelry, tools, and hardware.

(6) With chosen objects of utility before you, discuss their relative artistic merits with respect to the following qualities: uniqueness, abstract beauty of design, adaptation to purpose, material, color, finish, durability, and general decorative value.

(7) What are some of the chief modern influences affecting craftsmanship in the productive industries?

(8) Compare the oriental with the occidental peoples with respect to standards of living. How are these standards reflected in their industrial art?

(9) Do you think that, if England's forty-five million population should be reduced to its five million of a hundred years ago, craftsmanship would replace the machine? Why?

(10) Make a chart or an advertisement containing an illustration of a modern machine-made product and its handmade predecessor.

CHAPTER TWO

SOME ABSTRACT PRINCIPLES OF DESIGN

We shall assume at the outset that, with regard to articles of utility at least, the Greeks were absolutely right in their belief that beauty arises from the artistic qualities that are present in the objects themselves. Accepting this doctrine, the designer has still to ask : "What are these qualities? Are they so recognizable that I can plainly perceive them and return to them again and again to test the artistic worth of the designs I shall invent?"

It does indeed take application and practice of eye and hand to recognize and to devise the refinements that are possible in artistic design ; for here truly the art is long to learn. Rood¹ tells us that, given good powers of color discrimination and twenty years of practice, one may hope to become a good colorist. The Greeks spent much more time than that in producing those eternal forms of beauty that have been the delight of subsequent ages. But however far in the future the student's artistic goal may lie, he need have no hesitation in starting, for the broad outlines of the principal artistic characteristics of things are so distinct and

¹ Rood, Ogden N. : *Textbook of Color*.

outstanding that to be perceived they need but to be named and defined.

The elements of beauty that the Greeks prized most and that best teach the designer how to produce artistic results and how to measure the worth of those he has brought forth are: balance, symmetry, rhythm, harmony, and unity; a brief vocabulary indeed, but one of infinite variability and possible refinement. These terms will be briefly described and illustrated.

Balance is a term well understood by even the small child when he speaks of losing his balance. In art, the word balance means an approximation to stability, whether in lines, contours, or masses in light and dark values, or in the ideal equilibrium between warm and cool colors. Furniture would be out of balance in arrangement were it massed at one end of a room; pictures would be out of balance if the center of visual attraction fell to the right or to the left of the middle line of the space in which they were hung; colors in pictures would be out of balance did the light values greatly predominate over dark values, or dark values over light ones; colors in interiors would be out of balance were the reds and yellows so preponderant as to give a "scorched" impression, or blues and greens so much in evidence as to cast a chill over the spirit of the room.

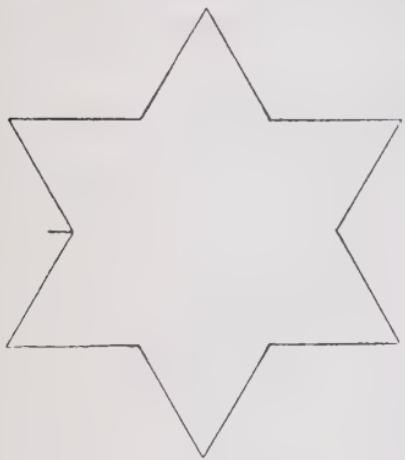
In deciding whether the elements of an object are in or out of balance, the designer must not forget the greatest thing in the utilitarian-artistic world — the purpose; otherwise his decisions are likely to have little

worth. Artistic instinct, if he have it, may indeed enable him to come to a correct decision. Artistic feeling should, however, be founded upon and reinforced by artistic knowledge. A discussion of balance is not complete until symmetry is considered, for symmetry is but a species of balance.

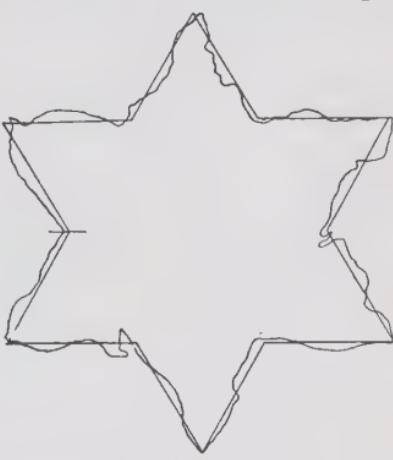
One of the most fundamental and at the same time the most pleasing ways of securing balance, whether in surfaces or in solids, is by making use of *symmetry*. The simplest illustration of what this term means is found in the arrangement of the fingers and thumbs of our two hands. Place the hands, palms down, upon the table. The thumbs are together while one little finger is at the right and the other at the left. Turn both hands over, so that the palms are up. The little fingers are now together while the thumbs are at the right and left respectively. Hence it will be seen that symmetry is regularity with reversal. The hands are alike in the regularity of their digits, but the thumbs and fingers of the hands are in reverse order. The right glove will not fit the left hand. The same regularity with reversal is, of course, true of the ears, eyes, nostrils, arms, legs, feet, toes, ribs, and other parts. No one of these parts would fit into the place of its counterpart on the opposite side of the body. To make the reversal convincing to the hand as well as to the eye, try to trace this six-pointed star from its image in the glass (page 25). This figure shows the best result obtainable from a class of students trying the experiment.

SOME ABSTRACT PRINCIPLES OF DESIGN 25

The designer has constant need for symmetrical arrangement in the various parts of his decoration, and it enters also into all the elements of construction. One leg of a chair, for instance, is the symmetrical counterpart of its mate on the other side but never its dupli-



SIX-POINTED STAR BEFORE
TRACING



Whipple's Manual, C. H. Stoelling
THE STAR AS TRACED FROM ITS
IMAGE IN A MIRROR

cate. The same is true of clothing; for example, the right sleeve would not fit the left armhole.

It is always something of an æsthetic shock to fail to find symmetry where it is expected, as one may observe when an eye, a hand, or a leg is missing, or when a hook or other device takes the place of a lost hand. A cork leg or foot does not give distress to the observer since its form is sufficient and its substance concealed. The halting step is only a break in rhythm. Primitive art sometimes carries the principle of symmetry to absurd lengths, as in idols or images of gods. Two faces are sometimes provided, one at the front

and one at the back, or there may even be two complete heads. Occasionally the arms in front are matched by a pair behind. Such figures are usually displeasing

if not repulsive to us, for it is an exaggerated sense of symmetry that produces them.

The importance of symmetry in securing balance may readily be seen. A man with one leg is out of balance; so would he be if he had two legs just alike. What is true of the human figure is true also of a sculptured figure. If one arm is destroyed the whole body is thrown out of balance. It would be better, so far as symmetry is concerned, to knock off the other too, as in Rodin's statue entitled *Men Walking*.

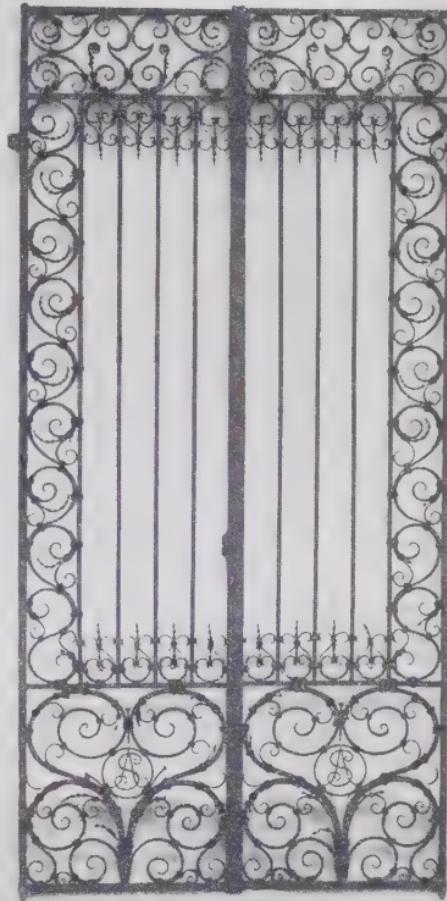


VICTORY OF SAMOTHRACE

The loss of a head in a statue is not so important from the standpoint of balance since there is no other part symmetrical to it. This is seen in the apparent ease with which we have accustomed ourselves to the

Victory of Samothrace (page 26). It is true that both arms are missing but this is a small matter so far as balance is concerned since the wings remain. One may become so accustomed to the contemplation of what is left of a once-complete though now mutilated statue that a restoration of the missing parts might even be felt to be an intrusion. We should be constantly on our guard against this error and should form the habit of judging all works aesthetically on their present merits alone.

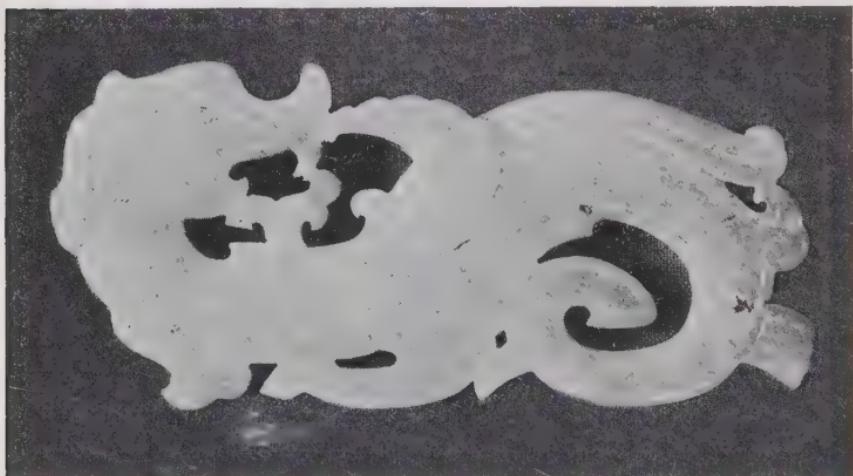
In decorative design and in all painting symmetry is a prominent means for securing balance, as when one scroll is set over against another, its counterpart, as seen in the illustration of iron work (above). Thus if two flower girls are to be repre-



Courtesy of Metropolitan Museum of Art
SYMMETRICAL BALANCE ILLUSTRATED IN AN
ITALIAN WROUGHT IRON GATE OF THE
FOURTEENTH CENTURY

sented facing the observer a better balance is secured by having one of the figures hold her basket on the right arm, the other on the left than would be obtained by exact similarity of position, with both baskets hanging from the right or the left arm. Branches of trees and leaves on the stem are also brought into balance by symmetrical arrangement.

Symmetry need not be complete to be effective ; it may be partial or relative, as when the designer feels



Courtesy of Metropolitan Museum of Art

UNSYMMETRICAL BALANCE

This is a Chinese girdle ornament dating from about the time of Christ.

that the principle of symmetry too exactly applied would produce the effect of disagreeable formality or sameness. Consequently, while preserving a general similarity of arrangement, he may vary the details of arrangement of parts (see above). It is only in the rarest instances, that such departures from perfect sym-

metry are made in decorative work. However, unsymmetrical balance is often seen in architecture.

Rhythm is a term that decoration has borrowed from music, poetry, and dancing, in all of which movement is marked by regularly recurring beats and accents. There is rhythm in the beating of the heart, in the regular tramp of marching feet, and in the ticking of a clock. Realizing that the monotony caused by a bare succession of uniform dots or strokes or lines or areas becomes uninteresting and ultimately tiresome, the decorator breaks up this monotony by accenting in some way certain of the regularly recurring parts. By this means he gives interest and force to what otherwise would be weak and less interesting.

When by accenting or varying the parts of a decoration the eye is led in a given direction, as to the right, to the left, upward or downward, the designer speaks of movement in his decoration. By movement he means such an arrangement of the parts in the decoration as to cause the eye to travel throughout the entire design.

Finally, when a decoration arouses the mind or excites the artistic interest of the observer, the artist speaks of it as being forceful or dynamic in contrast to an uninteresting one, which is termed weak or static.

Harmony is the result of adapting the parts of an object or design to the accomplishment of purpose. Here again we shall find our most perfect illustrations in the human body. Place the hands once more

upon the table, palms down. As we have seen, the two hands together form an absolutely symmetrical arrangement; but is there any symmetry in either of them considered apart from the other? The thumb



DIANA OF GABII

This statue expresses harmony of action. The costume is typically Greek.

is the broadest of the digits, and its position on the hand is not similar to that of any of the fingers. In order of length, the middle finger comes first, the ring finger second, the index finger third, while the little finger is the shortest of all. In like manner the fingers are graduated in size. Grasp some spherical object, however, and it becomes apparent that the hand is formed for purposes of grasping and holding rather than for any formal, nonutilitarian end like abstract beauty. Look at the figure of *Diana* (on this page). Granted that the hands and arms are symmetrical in structure, are they also symmetrical in the goddess' use

of them? The right hand holds the brooch on the shoulder with thumb and finger, while the left grasps loosely the ends of the mantle to be fastened; notice

also that the right hand is so turned that the little finger of each hand extends in the same direction. It is evident that formal symmetry of structure has been surpassed by harmony of action in that a definite purpose is being accomplished. Again, symmetry of structure is supplanted by harmony of action in that the right foot supports the body while the left foot is so placed as to suggest the easy preservation of equilibrium in a preparation to advance. The garments, symmetrical so far as symmetry of the physical structure necessitates, are arranged in harmonious folds which, while clothing the form, reveal here and there the smooth, soft curves of the perfect body.

Another illustration that invariably comes to mind when harmony and grace in the human form are mentioned is the far-famed *Aphrodite* or *Venus of Milo* (on this page). Though both arms are missing, this statue is still regarded as having been the masterpiece of Greek art in its expression of serene loveliness of form



VENUS OF MILO

and feature. As the figure of Aphrodite stands alone in the Louvre, flooded with light, before the red draperies that form its background, one feels that he still beholds in this imperfect statue the most perfect example of harmony and grace in marble that mortal ever saw.

In the *Victory of Samothrace* (page 26) we have an example of a statue, not in repose but animated and exultant. This goddess of victory has alighted upon the prow of a Macedonian flagship after the victorious naval battle against Ptolemy of Egypt. The head and arms are indeed lost, but the wings remain. Here we find grace triumphant. In every aspect of the wind-blown folds of the drapery we find the complete expression of exultation, the sense of being the bearer of good news concerning the triumph of the Greeks over their own fears and the valor of their enemies.

Harmony, then, is the result of balance and rhythm, for, while these are retained, the various bodily organs are adapted to the functions they must perform. The fingers are longer than the toes and more flexible, the hands are larger than the ears, and these than the eyes. Moreover, though the hands and arms are symmetrical in shape, they may be placed in different attitudes when the accomplishment of a desired result necessitates this change. Thus a violinist uses one hand to hold and draw the bow, but with the other he fingers the strings. The symmetrical use of the two hands is seen in the pianist. In chopping wood one hand grasps the curved and enlarged end of the ax handle, while

the other is free to slide back and forth at different stages of the stroke. The whole human mechanism is thus free to adjust its several parts in changing relations in accordance with any thought, emotion, or purpose the mind may dictate. Dejection, modesty, hope, triumph, defiance—in short, any mental state—may be adequately represented by the harmonious arrangement of torso, head, and limbs, together with the corresponding expression of countenance. The essence of harmony in the body is found, therefore, in the agreement that exists between the mind and the bodily organs that conform to its direction, and between the various parts of the body themselves.

In the artistic world, the term *unity* implies the assembling and organizing of diverse parts or elements into a beautiful ensemble, or whole. The central idea of such an ensemble is purpose, sometimes simple, sometimes complex. It is not vanity nor a sense of superiority that makes us see in the human form the most complete æsthetic unity to be found in the domain of living things, for here we have both the greatest complexity and diversity of means and the greatest range of physical and spiritual ends. Yet the æsthetic value of any animal form must be estimated not according to standards foreign to such an organism but strictly according to the ends that the creature is intended to attain and the means whereby it survives in a world more or less hostile to it. It would be idle, therefore, to say that from the standpoint of unity, a

butterfly is more beautiful than a cat. Each has unity but with different means and for different ends.

Even in the world of inanimate things, when we recognize unity or seek to produce it, the idea of organization of means to an end is ever close at hand. Balance and rhythm are valuable if not always essential means of producing unity, but neither of them is the whole of it. No assemblage of parts ever makes a unity until the parts have been so organized that they effect a purpose. This is self-evident in the case of a plant or animal form; it is true, even if not so evident or so simple, in the unities of home and of costume.

Though harmony finds its most perfect exemplification in the human body, it is also a necessary factor of beauty both in individual objects and in their artistic arrangement. The parts of a chair, for example, must harmonize in respect to mass, proportion, and contour, and always with respect to the function that each part plays in producing an artistic whole. If the legs are too long or too thick or too profusely ornamented, they clash with the other parts and destroy the beauty of the whole. If the legs are spindling and the seat massive, harmony again is lost.

Just as each artistic object is an organization of parts harmoniously shaped, so the furniture of a room should be so selected and arranged that each piece harmonizes with its neighbor while all is in perfect harmony with the spirit and purpose of the room as a whole (page 35).

Harmony is never more pleasing or a lack of it more



© Good Furniture Magazine

HARMONY EXPRESSED IN DINING ROOM FURNITURE

painful than in the selection of colors, whether in schemes for home decoration or for clothing. Harmony of color is manifestly so important in the production of artistic effects that Chapter Four will be devoted entirely to it.

The interior decorator or designer for the home is often confronted with such questions as the following : How can I produce most effectively the sense of social cheerfulness that should always be found in the dining room? How can I produce the atmosphere of gayety and social freedom that should obtain in rooms where congenial persons meet? Can people converse freely if surrounded by vivid blues or purples or by ornate and stately furniture? By what means shall homely comfort be promoted in the living room? How shall I contribute to the sense of individual taste and ownership in private apartments? Can unity be obtained in a room in which no two articles of furniture are alike? To what extent can a color scheme unite what would otherwise be diverse? Is it advisable to have the whole house furnished in a single style such as Colonial, William and Mary, Sheraton, Heppelwhite, or Adam, or may I secure unity in a house as a whole if I use a different period in each room ; as, for example, Sheraton in the parlor, Adam in the boudoir, Colonial in the living room, Windsor in the kitchen, and Heppelwhite in the dining room? How would examples of each style look brought together in a large living room? What would be the effect were I to ignore all styles

and to unite what I should like to buy with what I already have?

The burning question in the domain of costume is, as we shall see in the concluding chapter: How can the inconstant vagaries of fashion for the masses be made consistent with the eternal rules of art for the individual? Fame, fortune, and the benediction of mankind await the costume designer who can answer this question adequately.

The student may greatly enhance the keenness of his artistic perceptions and at the same time cultivate taste by analyzing everything that comes under his observation at home and upon the street. He may measure each object by such questions as these: Is the object well balanced when its purpose as a whole and the subordinate purposes of each of its elements are taken into consideration? (A specific article of furniture, a picture, a piece of glassware, porcelain, or silverware, a lighting fixture, a rug, a ring, a house, a public building, a church, a costume, an undecorated vase, a page of a book, a newspaper, an advertising poster, an illustration, a tool, a stationary machine, a tractor, an automobile, a canoe, a steamship, an airplane.) Does the object secure its balance through symmetry or without it? What part do color, form, material, and texture play in securing balance in costumes under observation? Is a shoe, for example, well balanced if it unbalances its wearer? Is a specific object harmonious in form and material in respect to its

component parts? (For example, are wood and iron or wood and stone or brick used together harmoniously or inharmoniously in a product? How would heavy concrete roof slabs in a train shed look if upheld by small iron pillars just strong enough to support them?) Does the whole form a balanced unity in complete harmony with the purpose of whole and part?

In conclusion, it is evident that to be truly artistic a design must have balance of all its parts, which in turn must be so arranged that the parts produce harmonic unity for the achievement of purpose. Every element, moreover, must not only be adequate but must also seem adequate to fulfill the function it is expected to perform. If one part seems too strong or another too weak for its allotted office, the structure becomes at once unbalanced; if certain parts are distorted by unseemly shapes, that is, by shapes unrelated to the purpose they are to serve, the whole may become grotesque, like the body of a man with the legs of a goat, and this distortion will make artistic unity impossible.

QUESTIONS AND EXERCISES

(1) Experiment with rhythms by accenting regularly recurring units in a row of dots; of lines, vertical and horizontal; and of spots by some visible distinction such as length, breadth, size, and color.

(2) Study the houses that you pass on the street for examples of unsymmetrical balance produced by varying sizes and placings of windows and door openings or by irregularities in the roof

line. It is partly in the need for this kind of balance that architecture is generally included among the "fine arts."

(3) Study the structure of some familiar animal, such as a cat, a squirrel (look up the Greek derivation of this word in the dictionary. It illustrates the imagination and fancy of the Greeks), a dog, a cow, and report to class what you find of symmetry, balance, unity, and harmony.

(4) Apply the queries mentioned on page 36 to some home with which you are familiar, perhaps your own. What excellences do you find? What defects? What improvements could you make were the necessary artistic changes left in your hands? Make a diagram to show the objects placed as they are and as you would arrange them.

(5) Suggest one or more of the objects mentioned on page 37 for an examination and report similar to that asked for in the preceding question.

(6) Were you given a free choice among automobiles, which car would you choose on artistic grounds? Try to justify your choice by description and comparison with respect to the artistic principles discussed in this chapter. Illustrate your points with sketches, either on paper or on the blackboard.

(7) For a verbal description of the human body in harmonious action inspired by a militant mood, read Shakespeare's *King Henry V*, Act III, Scene I.

(8) Apply the artistic principles given in this chapter to objects illustrated elsewhere in the volume. A world of useful objects awaits a similar analysis at the pleasure of the student who is anxious to improve his taste. Henry Turner Bailey has said that taste develops gradually through the making of choices with reference to some ideal.

(9) Define and illustrate the principle of balance.

(10) Make a balanced design for a napkin or a table runner, using your own or other initial letters as the motif.

CHAPTER THREE

CONDITIONS THAT CONTROL MODERN DESIGN

To be reckoned good, each design for the shape of an object should meet successfully at least two tests of merit; namely: (1) Will the object when constructed adequately serve the purpose for which it was designed? (2) Will it be pleasing in mass and contour; or, in other words, will it conform to reliable artistic standards of shape? So closely are the adequacy to purpose and artistic worth related in the industrial arts that the designer could make no greater mistake than to attempt to attain beauty by ignoring purpose.

Ever since Hogarth's¹ time many unthinking people have apparently assumed as he did that the curve is the line of beauty, while the experimental psychologist has expended no little effort in trying to discover which of the geometric figures are in themselves the most beautiful. Let us assume, for illustration, that the preponderance of testimony among all the observers is to the effect that the curve is a standard of beauty and that among rectangles the post card, whose length is to its breadth, say as 3 to 5, surpasses all others in æsthetic value and is, therefore, the ideal rectangle

¹ Hogarth, William, 1697-1764, English painter and engraver.

sought. The application of these standards for beauty should determine their probable worth.

Is not the wheel of an automobile pleasant to look upon? And is not its circumference bounded by a curve? And its tire almost cylindrical? See, too, the curves on felly, spokes, and hub. Yet how could a wheel that was not round be true to its purpose? If it were rectangular in shape, it would not turn at all. It might turn if it were octagonal, but not effectively. We may conclude, therefore, that the curve in a wheel is necessary in order that it may perform its proper offices; and the hypothesis that the beauty of the curve in this case arises from its adaptation to purpose is allowable even if not proved. A similar argument might be made for the use of the ideal rectangle for the printed page of a book.

When we apply the tests of the curve and the ideal rectangle to objects in which they do not accord with purpose, we get a different result. Consider, for example, the silver knife, fork, and spoon (pages 4, 5, and 9). The spoon is all curves of contour and surface and hence is presumably an object of perfect beauty. The fork, however, has, say, half as many curves and one rectangle, so according to Hogarth's maxim it can be only half as beautiful as the spoon. The knife has few curves, and these are short and unimpressive, while its rectangular blade is long and narrow, in the ratio of 1 to 7, not at all the ratio found in the post card. Are we to conclude, therefore, that the knife is but a

sorry companion for the beautiful spoon or even for the half-beautiful fork? Must we condemn the shape of the fork because its curves are fewer than those of the spoon? Again, why are plates round rather than triangular, square, or oblong? Why, indeed, but because such a shape conforms best to the purpose of a plate and hence is its most beautiful form (page 42)?



Courtesy of Lenox Incorporated
ENCRUSTED GOLD AND ENAMEL SERVICE
PLATE

The shape of the pie knife is also determined by its purpose, which differs from that of the ordinary table knife.

From the foregoing it is evident that the designer should, once for all, dismiss from his mind the idea that he can make an object beautiful by putting into its form meaning-

less curves or by employing abstractly beautiful geometric figures that are foreign to the nature and utility of the object he is designing. So far as shape is concerned, the conclusion would seem inevitable that curves and rectangles in an object of utility are generally beautiful just in proportion as they accord with the nature and use of the object.

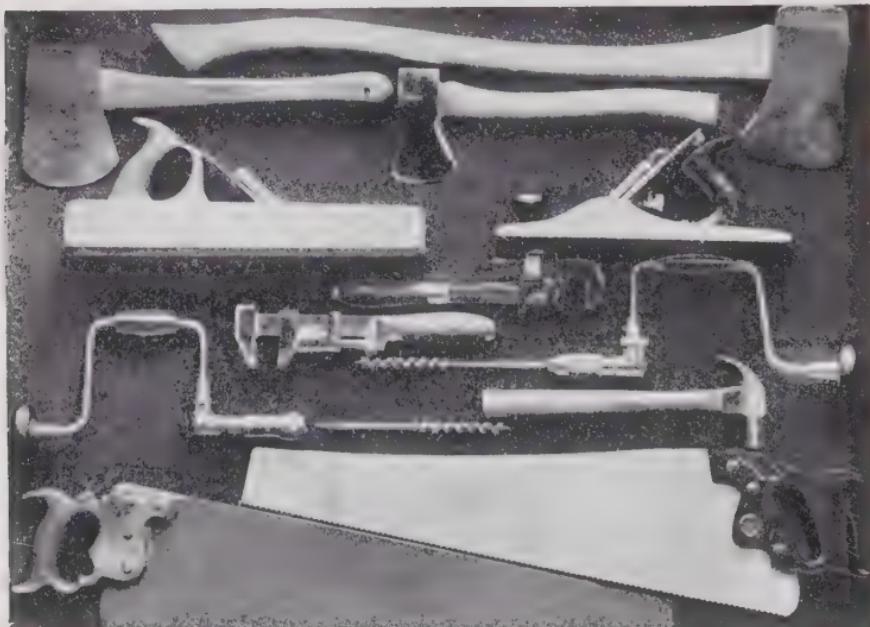
In this connection, look at the picture of modern silver spoons (page 9), then at that of mediæval

spoons (page 7). The clumsy handles and ladlelike bowls of the mediæval spoons have developed into that most perfect of modern utensils for conveying liquids to the mouth, the present teaspoon; while the butcher-knife blades and the pitchfork tines of the mediæval knives and forks have given place to the ideally shaped silver knife and fork that grace the modern table. A law governing the artistic development of such products might be stated as follows: The more perfectly an object of utility is adapted to its use, the more perfect are its proportions and, generally, the greater is the artistic merit of its shape.

Use or purpose as a guide to design is sometimes as rigid as an iron bar, and sometimes it is as elastic as a rubber band. In the one case, to the beginner in design it erects the signboard, NO THOROUGHFARE; but in the other it has the more welcome message, OPEN ROAD. Some designs have become so standardized that radical alterations are almost sure to involve a decided loss in both beauty and utility. Others are of such a nature that their function is not impaired by changes in form. These latter provide the open road to the beginner in design. But since it is important for the beginner to know what subjects to avoid, the products that tend to become standardized in design will be considered first.

Among the products now almost completely standardized we find carpenter's tools (page 44) and many machines, a few of the most common of these will

be considered. The ax, plane, brace and bit, hammer, and saw at the right in the illustration are the most shapely of their kind in the world; they are also the most efficient. The ax and plane at the left are those of a preceding generation, while the brace and bit and the saw at the left are still used, though they are con-



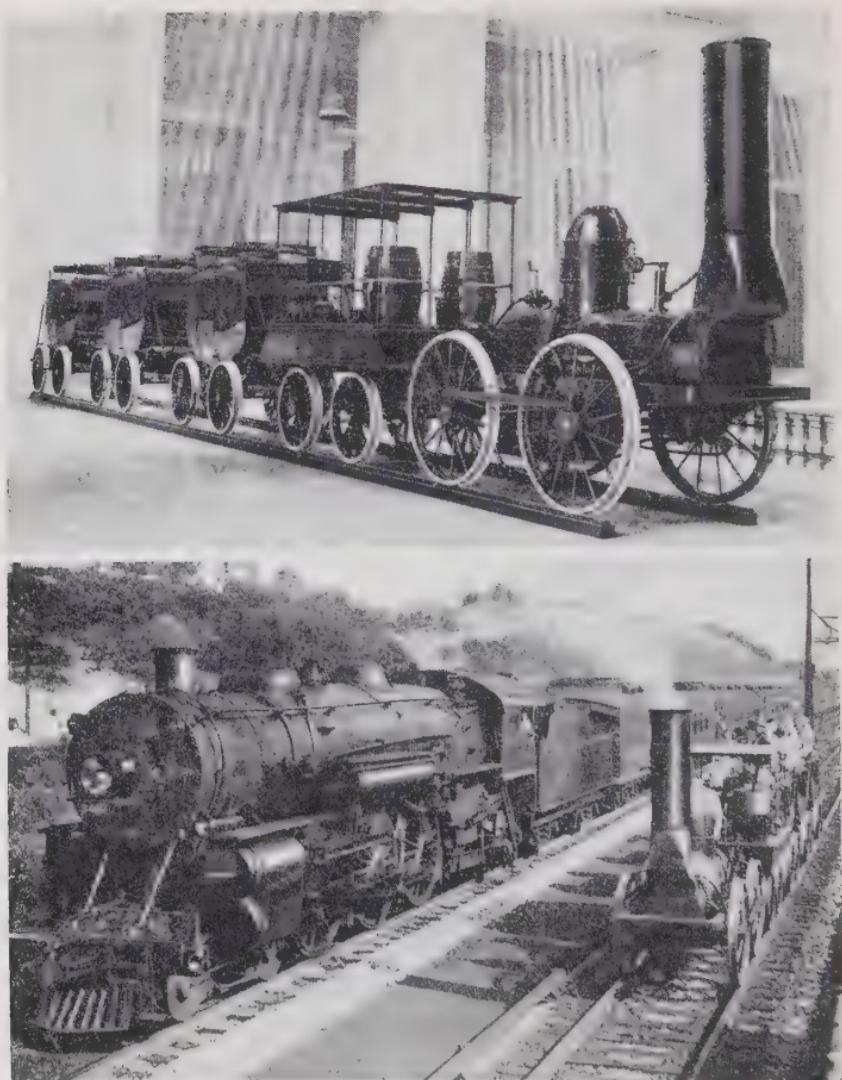
TOOLS IN WHICH EFFICIENCY KEEPS PACE WITH BEAUTY OF FORM

sidered somewhat old-fashioned. The artistic development of the ax may serve as an example of a similar evolution in the other tools.

Originally the ax was a crude-cutting wedge with a straight, round stick for a handle, but the four centuries of use to which it has been subjected in felling the primeval forests in America has refined it almost to the

point of perfection. While the Priscillas of the past were spinning yarn and weaving fabrics, their husbands and sons at forge and fireside were perfecting the blade and handle of the ax. Theory combined with experience has directed the smith as he forged the blade, the head, and the eye. The same forces have influenced the makers of the handle as they have selected the hickory, shaped it in the rough with ax and drawing knife, and finished it by the open fireside with knife and broken glass. The straight, round stick has become what we see, a gracefully curving handle, flat enough to enable the woodman to hold the blade true, large enough to fit the hand comfortably, enlarged sufficiently at the end to make the grasp sure yet be no bar to the comfort of the user, and curved enough to secure the maximum of ease and vigor of stroke. The whole constitutes a balanced perfection, which is as graceful in proportion as it is efficient in action. The edge of the blade rounds gently at its extremities for ease of entrance to the wood and recovery therefrom; above these rounded ends of the cutting edge, the blade is somewhat thinner front and back than through the body of the wedge, and for a similar reason; namely, that there may be greater penetration and less binding upon recovery for the next stroke. The head is just massive enough to balance the blade and is either made square for striking a nonpenetrating blow or is gently rounded as seen in the illustration.

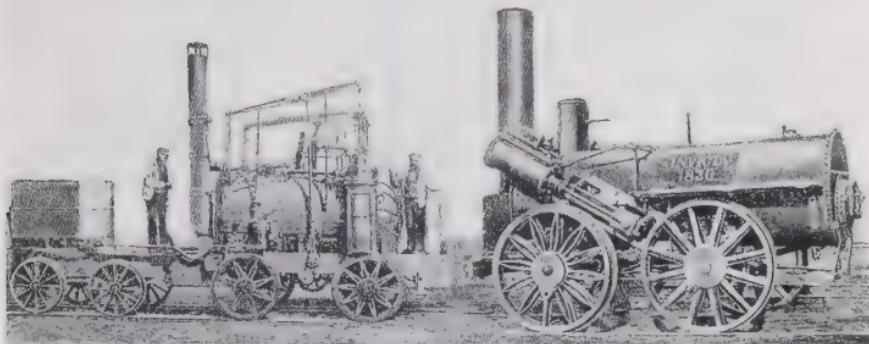
What is true of tools is equally true of their



ONE HUNDRED YEARS OF LOCOMOTIVE DESIGN

Here are shown the first and the most recent in locomotives, the *De Witt Clinton* wood-burning engine, the New York Central's first locomotive, beside the *Twentieth Century Limited* at Harmon, New York, July 14, 1921. The Clinton was the first train operated in New York, running from Albany to Schenectady in August, 1831. Throughout this evolution in design the distance between the tracks has remained the same. This has meant increased height. Bridges have had an influence upon the height, hence upon the design of the locomotive.

successors, the machines. Look at the cut of an early locomotive (page 46) and compare it with the more powerful and more shapely iron horse that



Courtesy of Scientific American

PARENTS OF THE MODERN LOCOMOTIVE

now whirls us over the land at the rate of a mile a minute. Here are two of the early, inefficient predecessors of the modern locomotive. The first locomotive



MODERN LOCOMOTIVE

This freight locomotive was built in 1918 for the Virginian Railway by the American Locomotive Company.

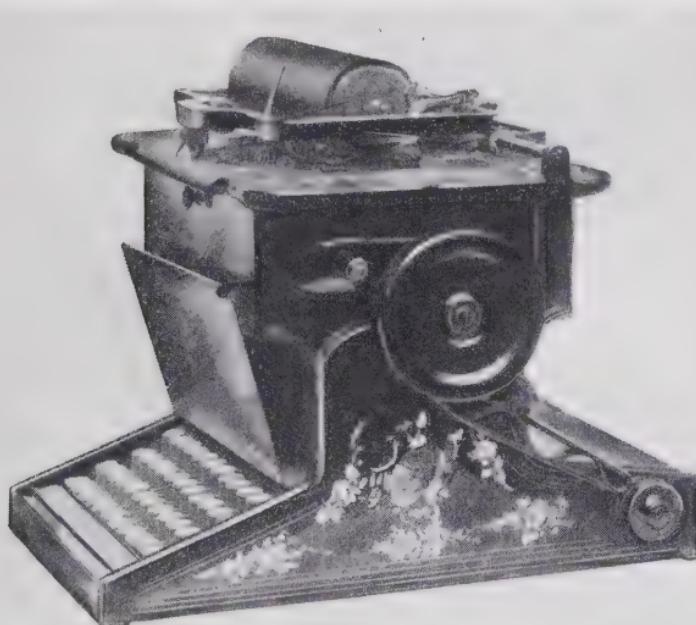
shown on this page is *Puffing Billy*, a crude and ineffective affair with a vertical cylinder. The second is the



MODERN RIFLES AND FLINTLOCK MUSKETS

Invicta of 1830, which shows the cylinder at an angle of 45 degrees, while the lower figure shows the present-day locomotive, surpassing anything of its kind elsewhere in the world in power and beauty.

The picture opposite makes evident that beauty of shape generally keeps pace with increased efficiency.

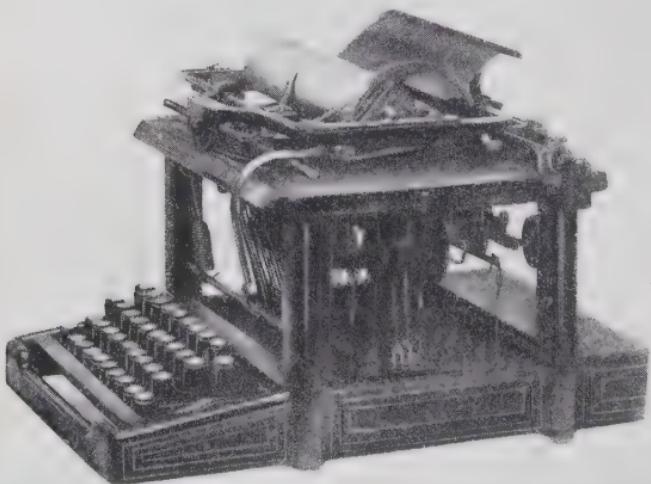


THE FIRST REMINGTON TYPEWRITER

At the right are two old flintlock muskets, the first dating from the time of the Revolution, and the one to its left from the War of 1812. They had a certain efficiency, being deadly at short range though clumsy and slow in action; but they are better looking than their predecessors, the clumsy and ineffective firelock and blunderbuss. The two guns at the left side are

modern high-power rifles, and they reflect their efficiency best in their forms, which for the present at least are regarded as standardized.

The cuts on pages 49, 50, and 51 indicate the evolutionary growth of the typewriter in efficiency and beauty of shape. The first is a picture of the first Remington machine. Aside from its foolish decorations, which



THE SECOND FORM OF REMINGTON TYPEWRITER

will be mentioned later, one may easily see that it is far less attractive than its successors as we know them to-day. The whole is inclosed in sheet iron, the back part being extended to match the keyboard while the keyboard has a hinged cover to match the closed rear. The cylinder, which is large and in the center, is shifted by means of a string which runs over the two

wheels seen at the side. The edges of the top plate are curved, not to increase the efficiency of the machine but just to look well, a false use of symmetrical curves.

The next illustration (page 50) shows the Remington Number 2, which has shed its sheet-iron garb and



THE THIRD REMINGTON TYPEWRITER

brought each part of the structure into harmony with the purpose it is intended to serve. The shift is made by means of a spring and lever, and the rear has been shortened, while the whole gives one the impression of businesslike, straight-line construction in accord with its purpose, which is to serve as a mechanism on which to write.

Typewriter Number 3 (page 51) preserves the general lines of its predecessor but has the type arms arranged in a semicircle. This arrangement brings an element of efficiency that has been lacking; namely,



PORTRABLE TYPEWRITER IN CARRYING CASE

what is called visible writing. The best typewriters of to-day have brought form and function into accord and hence have attained what is perhaps their maximum beauty of shape. This is well illustrated in the portable typewriter (above), which involves almost all of the

mechanical principles made use of in the parent machine but which is adapted to a somewhat different function. This machine has a standard keyboard (see figure below).

When an object of utility has reached this stage of standardization, seldom, if ever, is it subject to radical changes in contour and proportions. Minor changes due to a desire for novelty may be made, such as are found in the various styles of modern silver spoons, one style being named Georgian, another, Louis XVI, and another, Sheraton; but the general shape remains the same except in these minor stylistic details.

The following familiar industrial products may be enumerated as among those whose forms have become standardized, for the time being if not for all time: most common tools and machines; violins; pianos, both upright and grand; the silverware already mentioned; plates and saucers; watches; coins; pens; pencils;



THE REMINGTON PORTABLE

The plan view of the machine shown on page 52. Note the symmetry and refinement of design.

electric-light bulbs; dress-suit cases; umbrellas; bicycles; and most articles of men's apparel. When an article has become securely standardized, the maximum beauty of its shape may be assumed, for it will generally have attained all of which it is capable. Henceforth new designs are confined for the most part to minor changes in form and to decorations. For this reason standardized objects should not be chosen by the beginner in design; they do not offer sufficient scope for the invention of new forms that would be either beautiful or serviceable.

Much useful art, however, still offers an open road to design in shape. Architecture is chief among the practical arts in which form follows function. Architecture at the same time gives almost complete freedom of shape to the designer. It is indeed the bridge between the so-called useful and the so-called fine arts, for though it is usually classed as a fine art in the books on æsthetics, architecture is at the same time decidedly utilitarian in its ends.

“Form follows function” is a favorite maxim of the architect, which, though not always observed, is closer to the truth than maxims generally are. For neither the materials nor the decorations alone ever constitute a masterpiece in architecture, though these are both valuable elements. Instead, what counts most is proportion of length to breadth and to height; suitability in number, arrangement, form, and size of openings; proportion of roof to eaves and walls, of chimneys,

towers, pinnacles, projections, and depressions to one another and to the whole. It is these proportions, above all, when harmonious among themselves and fitting to the services they render, that make a structure a work of art.

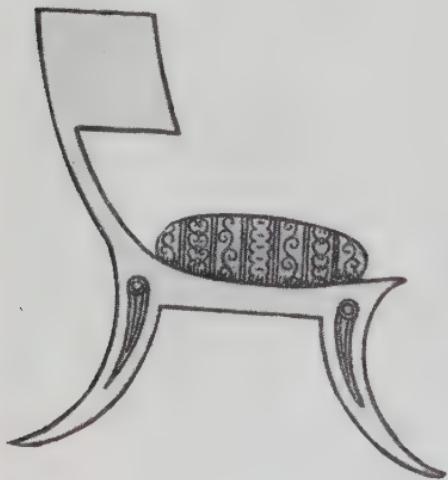
Harmonious proportions in architecture involve symmetry in shapes and masses, and balance in the placing of window openings, columns, and arches. They require also unity in the whole, whether considered in the structure itself, in its appearance among other buildings, or in its natural surroundings of mountains, hills, valleys, water, trees, and shrubbery. Yet with all its conformity to the rules of art, architecture sets no limit to the artistic freedom of the designer, for among a thousand artistic houses no two need be exactly alike.

When the factory enters the field, however, individual creations must give place to multiple creations, for each design is reproduced a thousand times. This at once places the professional student of industrial arts design in a peculiar position; his educational experience in a school of industrial art puts him in the class of the architect, but his future work as a designer will exact from him, not craftsmanship, except in rare instances, but planning for machine production. The prospective designer must, therefore, receive systematic instruction in planning designs in order to secure sufficient experience for his future needs, for in the world's markets craftsmanship has become almost

an archaic art, catering to limited demands, although some manufacturing concerns do still employ craftsmen to execute products from the original drawings before the machines are set to producing the product in quantity. The craftsman's work serves merely as a model; it is the design worked out in three dimensions. If it is not quite satisfactory from either the æsthetic

or the mechanical standpoint, it can still be modified before the machines have been set for executing it.

During the training period the needed freedom and opportunity to devise structures that do not call for repetition is at hand in many fields, for there are still



GREEK CHAIR

abundant products in which the performance of function admits of a variety of form. If the designer of a house is free to shape it as he will, so is the designer of the fixtures that are to furnish and adorn its interior; for most articles of furniture and most fixtures, like those for light and plumbing, are capable of performing their allotted service about as well under one form as another.

In this field the student-designer is just as free or nearly as free as the architect. The fact that ultimately his designs will go to the factory for machine production, rather than to the craftsman's shop, does not in the least alter the situation.

To illustrate further how adaptation to purpose is compatible with variety of form in the industrial arts, three pictures of chairs are introduced at this point (pages 56, 57, and 58). The first is a Greek chair probably twenty-five centuries old; the second, a Chippendale chair, dating from about the middle of the eighteenth century; the third, a mahogany upholstered chair of to-day. Each has artistic excellence, each is capable of performing the chief office expected of a chair, yet the styles differ widely. A glance into any good book on furniture design will show that styles of chairs and their variations are numbered by the hun-



Courtesy of Metropolitan Museum of Art
CHIPPENDALE ARMCHAIR (MADE ABOUT 1750)

dreds, some of them artificial and freakish, others consistent and artistic.

Another field of design, in which there is freedom to the point of license, is that of clothing. Since this will be somewhat elaborately considered in a later chapter, it may be dismissed for the present. So likewise

may the whole domain of decoration, whether applied to articles made of wood or of metals or to the products of textile art. Though certain forms of pottery, such as cups, saucers, plates, and platters, are standardized and hence closed as a field for the beginner in de-



Courtesy of Karpen Furniture Company
MODERN UPHOLSTERED ARMCHAIR

sign, other forms are as open and free as they ever were, as may be seen in a number of articles for decorative use; while the whole field of ceramics, or the art of making things such as pottery and tiles, from wet clay that is dried and hardened by means of fire, offers almost as wide a scope to the designer as does furniture.

Where there is a great amount of freedom in design, the prospective designer must be on his guard continually against falling into the common error of mak-

ing the product look like something else. The tendency of design to tag along in the rear of invention is seemingly as old as human progress. It would appear that only in cases where new inventions find no old forms to imitate is a new mechanical principle clothed from the beginning in forms equally new. Instances of this kind are found in the McCormick reaping and mowing machines, in telegraphy, and in aviation.

This lagging tendency of design has shown itself in two aspects: first, in the impulse to retain old shapes for new inventions in a given field; and second, in the attempt to secure beauty in one class of objects by borrowing characteristics of form from another class. These two aspects will be considered in turn.

Modern economic progress, with its accompaniment of wealth, education, comfort, and luxury, dates from the close of the eighteenth century when directed mechanical force began to take the place of human or of animal power in the performance of useful work. Since that time invention in this field has consisted largely in devising more effective means for applying the forces of nature. In accomplishing this end, it would appear that the inventor was incapable of devising at one time a new principle of action and an adequate form for embodying it; or, having this capacity, he feared to use it lest an inert public should not accept the new principle unless disguised under an old and familiar form. Illustrations are to be seen on every side. The first railroad trains were made up of stagecoaches linked

together. In the United States democracy made it possible for these to be displaced at an early date by long cars with doors at either end. In England and on the continent of Europe the desire to maintain class distinctions even in traveling has caused the stage-coach form of car to persist in some localities even to the present day.

An evolution of form to fit function that all adults of to-day have witnessed is that of the automobile body. In the year 1895, George Selden of Rochester, New York, took out five basal patents, which cover all the important principles of the automobile, but it took just twenty years to complete the transformation of the old carriage shapes of the horse-drawn vehicle into the new automobile body, which reflects almost ideally the powers and purposes of these new mechanical principles.

Promoters of the automobile naturally turned to the old carriage maker to build the body for the new mechanically driven vehicle. They as naturally adopted the old carriage body with only such modifications as were imperative, as, for instance, the omission of thills or tongue. The new "horseless carriage", as it was called, retained the characteristic curves of the old buggy or carriage body (page 61). The dashboard still adorned the front, the gasoline engine being placed beneath the seat: while high wheels, detached and narrow mud guards, small step, and open sides were retained.

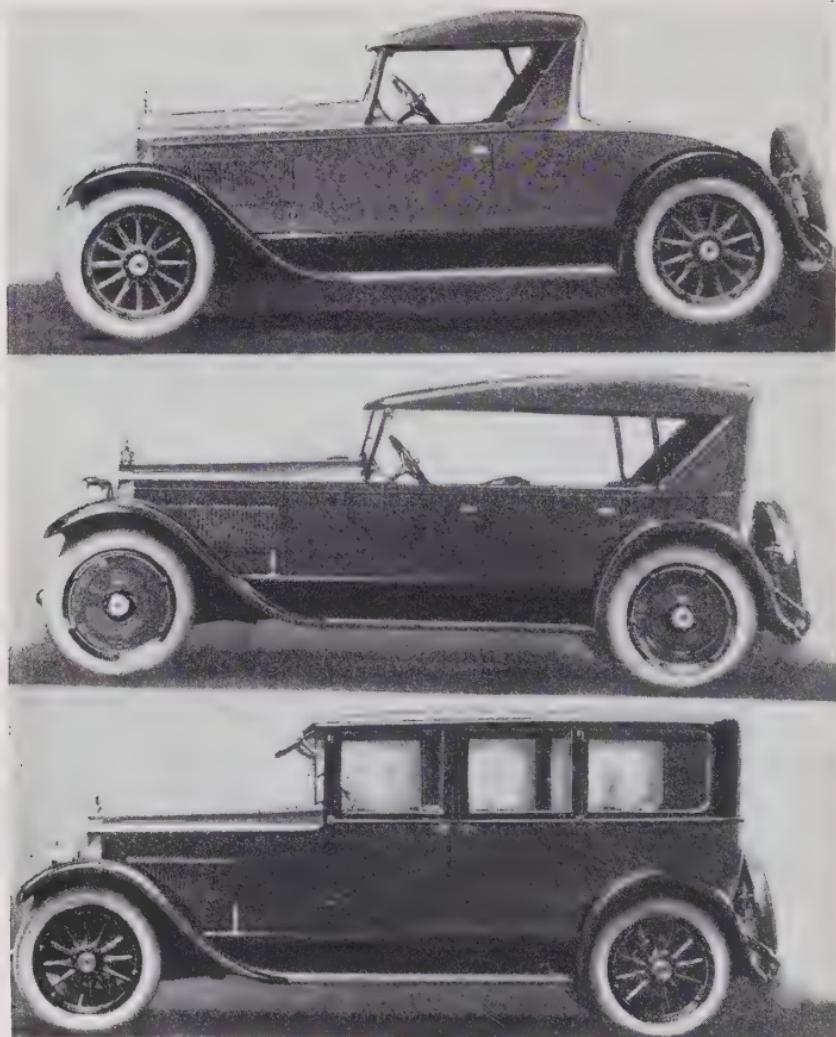
The carriage form was of course inadequate to the new functions. Think of trying to ride thirty or forty miles an hour in the short, open, and frail body of the Victoria or other favorite carriage! Its graceful lines



GASOLINE ROAD WAGON

The first internal combustion gasoline engine was built in Rochester, New York, by George B. Selden in 1877. Mounting this motor on the front axle, Mr. Selden thus invented the first gasoline-propelled road wagon. This was the beginning of the automobile industry, now the second largest in the world.

would indeed be the index of disaster. An adult has but to recall the familiar carriage features and then to go out on the street and look at the new forms of beauty

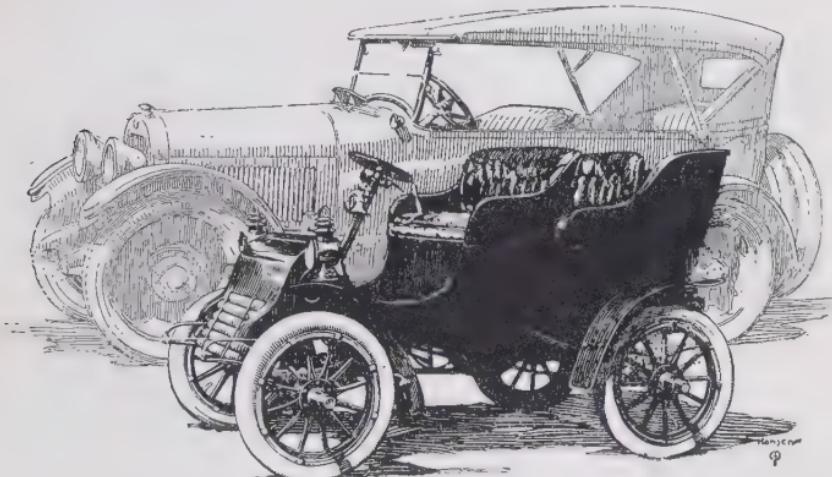


PACKARD CARS OF 1923

The best modern automobiles embody in their construction rhythm, balance, and harmony. Color and finish play an important part.

and enhanced utility before him to realize the prodigious changes in shape that have taken place (page 62).

Has the automobile body of the present reached perfection in artistic form and finish, or will future forms make the present ones seem as archaic as the forms of to-day make those of twenty years ago (below)? We may be fairly assured that no new shapes will be long acceptable that are not in essential accord with



A MODERN CAR AND ITS PREDECESSOR

There are twenty years of progress in automobile design between this little, chugging two-seater and its nineteen times great grandchild, the Cadillac car of 1922.

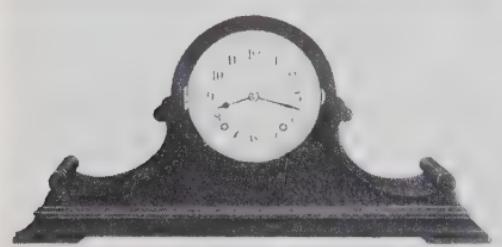
the service which we expect the automobile to perform ; there can scarcely be any tendency to return to the forms of the horse-drawn vehicle.

There are two influences constantly at work to unsettle what may seem to be permanent forms : first, the introduction of new mechanical principles, and second, the desire on the part of both the makers and

the buyers for novelty in shapes. We have to-day what is properly described as a beautiful, straight-line, automobile body construction, which introduces no curves except such as are essential to making a closed compartment for the occupants of the car. Yet we already hear manufacturers speaking of stream lines, and yacht lines as if the automobile were intended to float. Here one may anticipate a departure in form from the function of an automobile and a new tendency

to make it look like something else. This, of course, is an artistic danger; but it is not likely to be serious.

Form is more closely allied to function in some industrial products than in others.



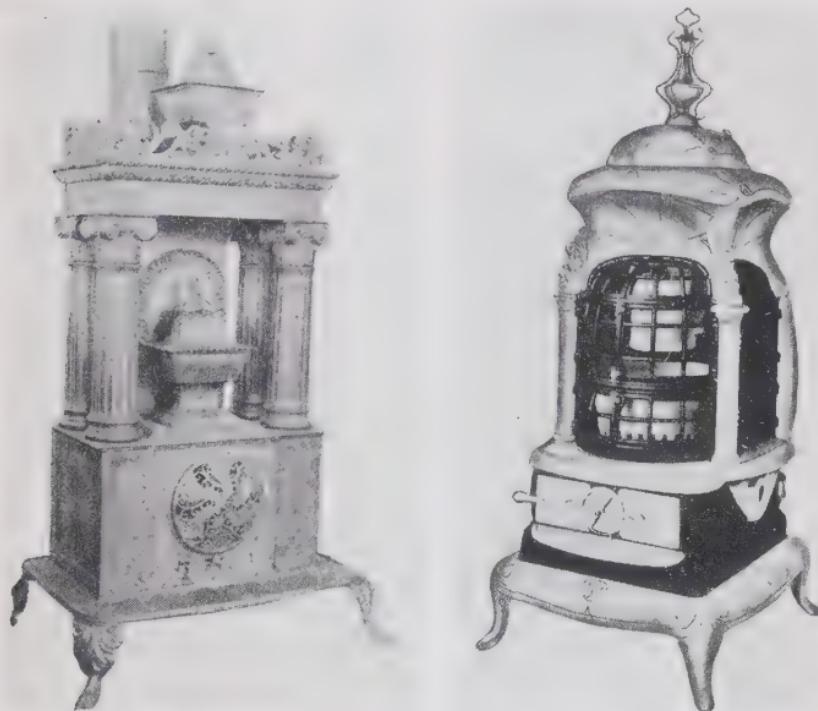
Courtesy of Seth Thomas Clock Company
AN ARTISTIC CLOCK

This clock was designed for a mantelpiece or a shelf. The design is simple, appropriate, and adequate.

Since a clock has no external characteristic features of its own except the circular dial and its revolving hands, the designer is left free to invent any arrangement of the dial that he deems artistic in itself and fitting for the place it is to occupy (see picture above).

It is much the same with respect to the design for a stove. Here are two illustrations in which architectural motives are prominent (page 65). Each of the stoves has Greek columns; in one example, these are ter-

minated by capitals, in the other, by grotesques. One of the stoves has an urn on top while the other has two urns, suggestive perhaps of the ashes of the departed. What possible analogy is there between a stove and a temple, except perhaps that the stove may



INARTISTIC HEATING STOVES

Architectural motives are inappropriately used in these designs.

be used in a temple? Certainly a stove and a temple are far apart in purpose, and there is no more reason why a stove should resemble a temple than a temple should look like a stove.

The attempt to beautify things by the introduction of architectural motives has by no means been confined

to stoves but has also invaded the domain of machinery. The Germans produced a steam engine dating from 1840, which might be considered the bloom of the nineteenth



Deutsches Museum, Munich

A STEAM ENGINE OF 1840

century plant. It was a miniature Greek temple with fluted columns and four-faced architrave complete. So far is the illusion carried that even the cylinder is a segment of a column. Without the flywheel at the back and the governor at the top it would puzzle one to tell what the thing was intended for. Its resemblance to a steam engine is indeed slight (see figure). During the same period the Hudson River prided itself

on steamboats whose walking beams were supported by Doric columns, and a little later the first sewing machines were destined to be adorned with architectural motives.

The idea of making use of architectural motives in articles of furniture is of earlier origin, for we find that during the Queen Anne and the early Georgian periods (eighteenth century) it was frequently employed, the larger pieces, such as cupboards, bookcases, and cabinets being often designed with such architectural features as pilasters, columns, and especially broken, curved pediments. Even chairs suffered from such treatment, though more rarely.

To be beautiful, it is unnecessary for one article to assume the form of a different one: a modern phonograph need not be inclosed in a form best adapted to a reading desk or library table, nor need a heater resemble a phonograph, nor a table leg look like a snake, or its foot like that of a lion. It is useless for a product to attempt to borrow beauty from something foreign to itself. Obviously it looks best and is, therefore, most artistic when it looks most like itself; that is, when in shape and contour it most completely and adequately reflects its own nature and purpose.

Since the beginner in design desires to be modern in all his work, it is to his advantage to know something about the influence that fashion has upon design. A law of the applicability of fashion to the shapes of objects of utility might be stated thus: Fashion may be expected to appear in an object of utility to the extent that its function is independent of its shape. Any shape will hold liquids, any style of binding will inclose a book, any efficient kitchen range will cook food;

but there is little or no fashion in the design of violins and common tools. It follows that most industrial arts products which are not standardized are subject to changes in fashion.

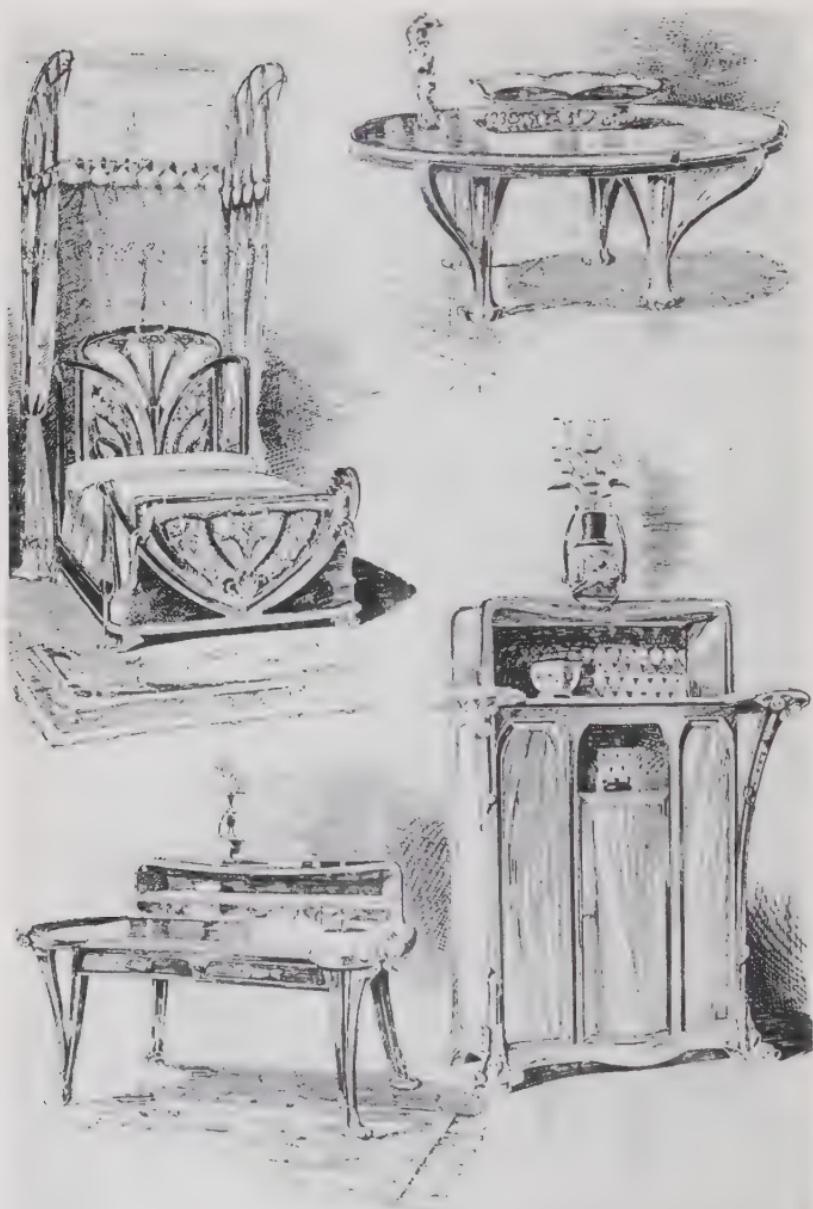
Fashionable things are beautiful only when they are well balanced in mass and contour and when in form, material, color, and texture they are in harmony with the purpose to be served and with their environment. Not all objects that are in fashion are beautiful; yet beautiful objects are always artistic whether they are in or out of fashion. An object that is really beautiful will never look queer though it may seem quaint when placed among things wrought in a different style. The things that are most truly in fashion to-day are those that most correctly reflect our industrial and social life, as the fashions of long ago reflect the economic conditions that inspired them. The modern designer must be true to his country and his times and he must also be true to the fundamental principles governing artistic production. The freakish, the bizarre, and the meaningless in design are always evidences of ignorance or poor taste.

Sudden changes in social and political conditions are likely to bring about changes in fashion that are as transient as they are artificial. Historic examples are found in the furniture produced in France and England following the reigns of the French kings, Louis XIV, Louis XV, and Louis XVI. Then extravagance and classicism prevailed. The rise of Napoleon and his

empire caused a corresponding artificial change in furniture styles, for Napoleon appointed three men, Percier, Fontaine, and David, to create a new fashion. Irrespective of the artistic worth of what these men brought forth, many people at once accepted and admired it. After a decade and a half Napoleon retired, and a Louis came back and with him the beautiful old styles before the Revolution.

For a half century the designers in France were content to reproduce these elegancies together with others borrowed from the incomparable English makers of the Chippendale-Sheraton-Heppelwhite school. Then they awoke to the realization of the fact that they were mere copyists and imitators of the former styles, and they raised their voices and shouted as one man: "Let us found a new fashion!" This they did with the result that artificiality again imposed itself upon French design in the guise of what the designers chose to call *L'Art Nouveau*, the new art, which once more attempted to shake off completely the trammels of the past (page 70).

The results produced under the name of *L'Art Nouveau* were for the most part artistically unfortunate, for the designers failed to realize that nothing is more unnatural than nature when forcibly applied to realms with which nature has nothing to do except to furnish the inspiration. The new fashion had its day and pleased some people, however many of the judicious it may have grieved; all of which would seem to indicate



Courtesy of Longmans, Green, and Company

L'ART NOUVEAU

Examples of "New Art" with motifs from growing things.

that fashions artificially produced, though they may bring momentary applause, will never bring lasting approval except to the extent that they may chance to be artistic, for, as every artist knows, designs that are once beautiful are always beautiful.

The arrival of William and Mary in England brought political liberty and it also freed England from the oppression of its heavy furniture. The eighteenth century saw a rapid development of the new styles which are known as the Queen Anne and the Early Georgian, the Chippendale, the Adam, the Heppelwhite, and the Sheraton. These styles, compounded with creative artistic skill of many elements, Greek, Chinese, Gothic, English, and French, became and still remain the highest expressions of art in furniture. No wonder these historic styles still excite our artistic admiration, nor is it strange that the present witnesses a return to their beautiful shapes, which exemplify an almost if not always complete harmony between form and function. If we, like the French people of the middle of the nineteenth century, should tire of their beauty even in its present stage of near perfection and clamor for something new, it is to be hoped that we shall be satisfied only with such fashions as are truly artistic.

QUESTIONS AND EXERCISES

- (1) Discuss the question "Why should training in craftsmanship be made an essential part of the training of designers for machine manufacture?" (The views of some practical de-

signers on this topic are contained in Richard's *Art in Industry*, The Macmillan Company.)

(2) Architectural features are not common in modern furniture. Under what circumstances might architectural features in furniture be appropriate? Look for historic examples in this volume and in standard works on period furniture.

(3) Make sketches to show a brief analysis of curves commonly found in furniture, including the curves that promote purpose as well as those which are intended to be purely decorative. Refer to books and magazines and to actual pieces of furniture where possible.

(4) Examine the shapes of picture frames in the schoolroom and elsewhere to determine to what extent they have been adjusted to the shapes of the pictures. Consider also the matter of sizes.

(5) Has the phonograph cabinet attained an independent shape growing out of its nature and use, or are its forms borrowed from other things? Are its curves, if it has any, artificial or are they in accord with purpose?

(6) Make a list of things that you have seen or can find that have borrowed their forms partly or wholly from other objects.

(7) What is your opinion of an automatic or player piano from the art standpoint?

(8) A kerosene lamp requires a receptacle to hold the oil; a gas lamp needs a tube to convey the gas; an electric light requires wires to carry the current. Could a single vase-form lamp be devised that would seem appropriate for all three? Prizes for such a design were recently offered by an American art organization.

(9) Design in cut-paper silhouette, a vase for holding flowers with long stems, as daffodils. A dish for holding flowers with short stems, as pansies.

(10) Make a free-hand perspective sketch of one of the receptacles designed in answer to 9.

CHAPTER FOUR

THE ARTISTIC SIGNIFICANCE OF COLOR

Color is an important factor in fashion and in beauty ; for rhythm and balance and the resulting harmony may be secured through a proper understanding of its theory and application. Consequently, a knowledge of color is of the utmost importance both in the training of the designer and in the education of all who will be called upon to make selections of the products of design.

A song is sweet, yet passing brief ;
But color lasts, for 'tis but light
Resolved to myriad hues, —
The yellows, reds, and blues,
The oranges, the greens, and chief,
The royal purples, kin to night.

I love their simple mellow shades, —
The deep, dark reds, the ruddy sheen
On polished tropic wood,
And, 'neath the dusky hood
Of night, on quiet seas and glades,
I love the shades of blue and green.

What joyousness their tints inclose ! —
The filmy webs of blue and pink,
Pale orange, and the greens
And golds of sunlit scenes ;
And then there comes the tint of rose,
Which children love the best, I think.

And would you have the colors blent
In harmony? — then make them one
At heart; or melt with gray
The clashing hues, the way
The clouds on rainy days are sent
To veil with mist the dazzling sun.¹

Two systems of color study are to-day taught in the general and special art schools and classes. One of these is based on light, while the other is based on pigments or paints. Since color itself is reflected light, it will at once be apparent that any accurate system of color classification that is based on light, as is the Munsell System of color notation, must be superior to any other system based on unreliable pigments. In daylight it will be more accurate to the extent that nature is more nearly constant than man-made paints.

Some artists have been reluctant to accept the Munsell Color Theory. They have maintained that a system that deals largely with standard pigments must of necessity be more practical than any other, since it employs the artist's own materials, which he uses constantly in painting. Should not the pupils be taught in school to mix paints?

The mixing of paints is indeed quite essential in art education, and yet the recognition and harmonizing of the colors themselves are of more importance to the public than the mere production of colors, important as this may be. People in general will find the Munsell

¹ *The Colors*, a poem by Charles De Garmo.

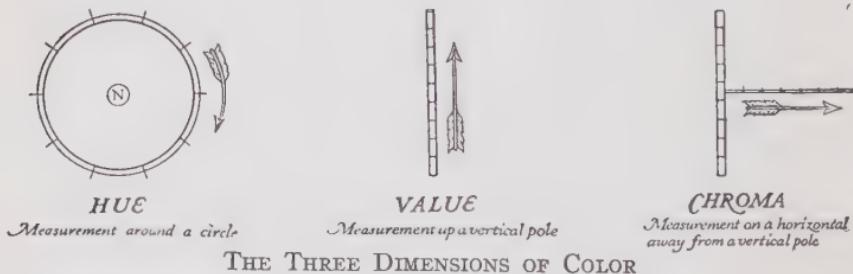
Color System even more practical than the pigment theory in solving the æsthetic color problems of daily life. In order to determine whether or not a tie harmonizes with a suit, or a hat with a gown, it is not necessary to mix paints. All colors are seen in the light, the rays of which the materials absorb and reflect, and they will harmonize or clash with one another in and of themselves. Here is where the pigment theory falls short. A pigment system may be of some use as a measuring and harmonizing device, although it must be admitted that it is extremely inaccurate as such; it is of unquestioned value, however, in the mixing of paints, a few elementary rules for which can be learned at the outset. These should not be regarded as constituting a system of color naming since the pigments of which they treat are, in themselves, variable.

The remainder of this chapter will be given to a description of the Munsell Color System.¹ The first essential to an application of this system is a clear understanding of the three dimensions of color, and, once the simple logic of these is grasped, the practical advantages of the system will be manifest. The reader should be warned at the outset against the fear of scientific perplexity which is ever present in the lay mind. The three dimensions of color are not involved

¹ This description was prepared by Mr. T. M. Cleland. It is used here with slight modifications, with the permission of and by special arrangement with the Munsell Color Company, Incorporated, and The Strathmore Paper Company.

in the mysteries of higher mathematics. There is nothing about them which should not be as readily comprehended by the average reader as the three dimensions of a box or any other form which can be felt or seen. We have been unaccustomed to regarding color with any sense of order and it is this fact, rather than any complexity inherent in the idea itself, which will be the source of whatever difficulty may be encountered by the reader who faces this conception of color for the first time.

On pages 97 and 98 will be found two colored diagrams accompanied by an explanation which has been made especially to present the three dimensions of color concretely and to avoid the abstractions of written explanation. The idea of the three dimensions of color can be even more simply, though less completely, expressed thus:



With these three simple directions of measurement well in mind and by reference to the diagram mentioned above (where actual colors are printed), there need be little difficulty in comprehending what is meant by color "measurement." In considering further the qualities

of color, which are expressed by these three dimensions known as hue, value, and chroma, we will take each one of them separately in the order in which they are written, trusting that having done so we may pass to the subject of color balance and the resulting harmony and its application to everyday practice equipped with a clear understanding of how color may be measured and noted.

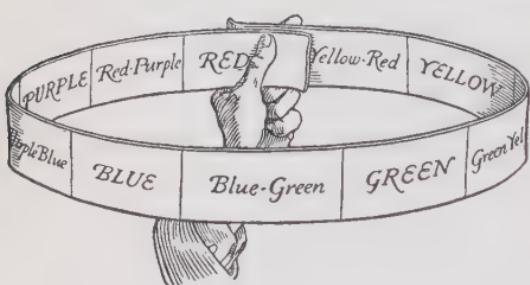
HUE, or the first dimension of color, has been defined by Professor Munsell as "the quality by which we distinguish one color from another, as a red from a yellow, a green, a blue, or a purple," but this dimension does not tell us whether the color is dark or light, or strong or weak. In brief, hue is the *name* of a color. It merely refers to some point in the spectrum of all colors, such as we have seen in the refraction of sunlight through a prism. Let us suppose now that we had

RED 1	Red Purple 10	PURPLE 9	Purple-Blue .8	BLUE 7	Blue-Green 6	GREEN 5	Green-Yellow 4	YELLOW 3	Yellow-Red 2	RED 1
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THE COLOR BAND

such a spectrum cast by a prism, or a section taken out of a rainbow. We know it to be a scientific fact that it contains all possible hues, merging, by indistinguishable degrees, one into the other but always in a fixed order. Now let us imagine that we have such a spectrum fixed or printed on a band of paper and that it begins at one end with red and, going through all possible hues, it arrives at red again at the other end. The hues are unevenly divided and they merge one into

the other by indistinguishable degrees. But still preserving the order of these hues, let us divide them into equal steps as we do a ruler into inches, by selecting certain colors familiar to us in everyday use — red, yellow, green, blue, and purple. These we will call the principal hues. Between each of them we will make another division where each merges into the other. These we will call yellow-red, green-yellow, blue-green, purple-blue, and red-purple, and they will be known as intermediate hues because each of them lies between two principal hues.¹ Thus we shall have ten divisions



THE COLOR RING

upon our band. The reason for this number of divisions will be understood when we come to consider the question of color balance. It presents a sufficient

variety of hues for purposes of demonstration and for most practical uses. Now if we bend this band around in a circular hoop so that the red at one end meets and laps the red at the other end, we have a perfect scale of hue in the circular form in which we shall always

¹ In the naming of these steps of hue, Professor Munsell has wisely adopted a terminology which is commonly understood as referring only to color and has avoided the use of such terms as orange, pink, violet, etc., which have other meanings and might lead to confusion. What is called *orange*, for example, he calls *yellow-red* because it is a mixture of these two hues.

consider it. So it is that when we specify the first dimension of a color we are merely referring to its position on this circle of hues. In writing a color formula this first dimension is expressed by the initial letter of the hue—*R* for red, which is a principal hue, and *B-G* for blue-green, which is an intermediate hue.

Ten being a decimal number, these steps may, of course, be infinitely subdivided, and it may frequently happen that a given color does not fall exactly on any one of these ten divisions of hue but somewhere between two of them. Allowance has been made for this by dividing each of the steps of the principal hues into ten further divisions. These ten subdivisions represent about as fine a variation of hue as even a trained eye can distinguish, and it would be obviously futile, for practical purposes, to carry it further. If we uncurl our band again in order to see better what we are doing and note these divisions upon it, they will appear in this order :



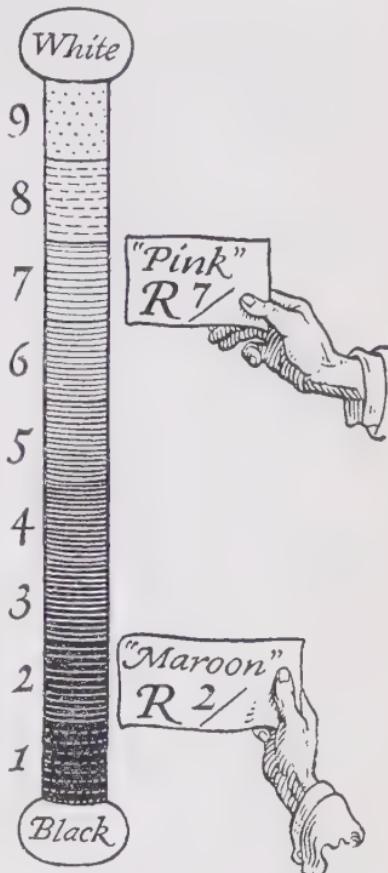
PRINCIPAL AND INTERMEDIATE HUES

Reading from right to left, beginning at the left of an intermediate hue, the numerals run from 1 to 10, 5 always marking a principal hue and 10 falling always on an intermediate hue. Thus we have a series of numerals denoting any practical step or gradation between one hue and another, and in writing a color formula of which one of these intermediary hues is a part, we place the

numeral denoting the position of the hue on this scale before the letter which stands for the nearest simple hue, thus $7 R$, $2 Y$, etc. If, for example, we wish to write the formula of a color the hue of which is neither red nor yellow-red but about halfway between the two, we would write it $7 R$ or $8 R$, according as it was nearer to the red or to the yellow-red.

VALUE, or the second dimension of color, is possibly the simplest to understand. It is, according to Professor Munsell's definition, "the quality by which we distinguish a light color from a dark one." In short, value is the *light* of a color. We noted that the first dimension (hue) did not tell us whether a color was light or dark. It told us, for example, that it was red and not green, but we know that there may be light red and dark red, and it is the function of this dimension of value to tell us how light or how dark a given color may be. For this purpose we shall need a scale of value which we may conceive as a vertical pole or axis to our circle of hues, black at the lower end, representing total absence of light, and white at the top, representing maximum light, and between these a number of divisions of gray, regularly graded between black and white. This gradation could also be infinite. Since pure black is unattainable, we shall call that 0 and begin our scale with the darkest gray as 1, numbering the steps up to 9, which is the lightest gray. Pure white, which is also unattainable, we shall call 10. In the practical use of the scale of value, therefore, we shall have but nine steps

and the middle one of these will be 5 — what is referred to as *middle value*. This scale of value is well represented on one of the colored diagrams already referred to, where it is shown with the actual gradations printed. These steps of value have been scientifically measured and registered by means of an instrument known as a photometer.¹ In writing a color formula we express this dimension of value by a numeral, which denotes at what step upon the scale of value the color falls. This numeral is written *above* a line, as *B 6/*, for example, by which we mean that this particular blue, regardless of its other qualities, is as light or as dark as the sixth step upon the scale of value. A color such as is commonly called "maroon" is an example of a red which is *low in value* because it is dark, and what is commonly called "pink" is a red which is *high in value* because it is light.

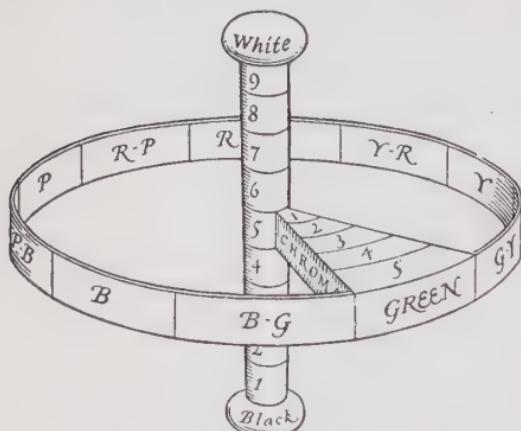


HIGH AND LOW VALUES

¹ The photometer is described in Professor Munsell's book, *A Color Notation*.

Having familiarized ourselves with these two dimensions and understanding what qualities of a color they express, let us proceed to consider the third dimension, without which our description of any given color is incomplete.

When we have stated that the color is blue or yellow or green and that it is dark or light, we have indicated two of its important qualities, its hue and its value, but we have by no means described it completely.



HOW CHROMA IS MEASURED

We may say of an emerald that it is green and that it is light, but we can say that certain grapes are green and also light, and yet there is a decided difference between their respective colors if we place them side

by side. Both may be green and of the same light, but it will be seen that the color of the emerald is quite different from that of the grape. It is this difference which is measured on the dimension of chroma. CHROMA is the *strength* of a color. The scale of value has been referred to in the convenient and easily understood form of a vertical pole, which represents a neutral axis to all the circle of hues and is itself of no hue but is pure gray. Around this pole we may place our band

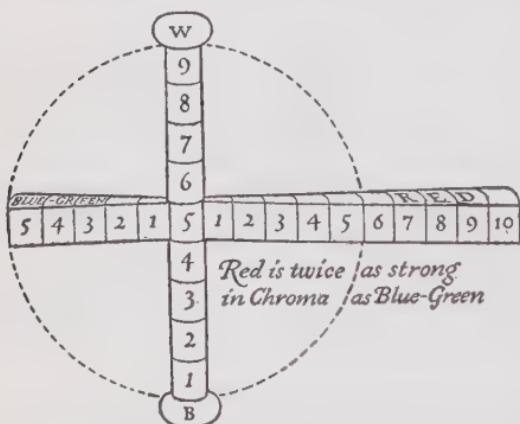
representing the scale of hue, and then if we imagine any one of these hues on the circumference of the band to move inward toward the gray pole in the center, growing grayer or weaker in color strength until it reaches this center pole and loses its hue entirely, we have grasped the idea of the dimension known as chroma. By dividing this movement into regular measured steps, we shall have a scale upon which the strength of color may be measured. This is clearly illustrated on the colored diagram on page 97, where several steps of yellow are shown printed on the scale of chroma. This dimension of chroma is written in a color formula by means of a numeral *below* a line, which denotes the step upon the chroma scale at which it falls, thus: /5, /18, /19, etc.

All of the hues may be thus measured on this scale at right angles to the vertical pole and grading from gray, step by step away from the pole to greater and greater color strength or chroma.

Professor Munsell has devoted a part of the introduction of *The Color Grammar* to a description of what he calls "the color sphere." This is a general form which aids the orderly consideration of color and within which all color balances, as will be shown later; but in the actual measurement of pigment colors, such as we use in printing or painting, all of the paths of chroma would not be of the same length nor would they all be comprised within a sphere. Certain of them would extend to points outside of it as is shown in the diagram on page 84. Nor would all of the

paths of chroma reach their greatest length at the equator of the sphere, that is, the level of middle value. There are two reasons governing this which it is important to understand: First, *colors differ by nature in their chroma power, some being much more powerful than others.* The strongest red pigment used, for example, is twice as powerful as the strongest blue-green pigment and will require a correspondingly greater number

of steps on a longer path to reach gray. The chroma path of red is the longest and extends far outside the sphere, being ten measured steps from the neutral pole;¹ while blue-green is the shortest, being only five steps. The



CHROMA PATHS OF RED AND BLUE-GREEN

sphere is limited in size to this shortest axis for reasons which will appear when we take up the question of balance and harmony of color. The second reason is that all colors do not reach their maximum chroma at the same level of value. It can be readily comprehended, for example, that the strongest yellow

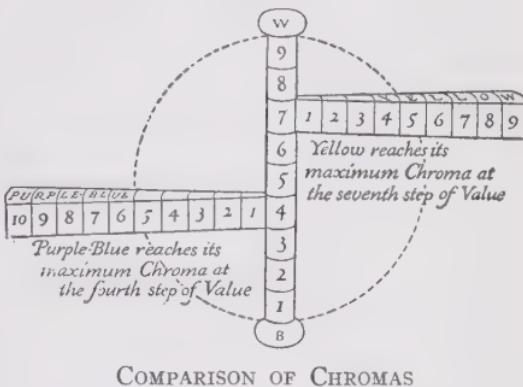
¹ This is the chroma of vermillion in dry form. Red printing inks are now made which are considerably stronger than ten steps of chroma.

pigment is by nature much lighter, or higher, in value than the strongest blue pigment and, therefore, that the complete chroma paths of these two colors will each touch the neutral pole at different levels.

Thus it is evident that a complete image of all pigment colors can not be comprised within the sphere; and we are led to seek another form which will convey more completely the character of color qualities and dimensions governing the range of pigments in regular use. Professor Munsell has conceived this as a "color tree" with a vertical

trunk for the scale of value and branches representing the different hues, these branches varying in length with the chroma power of each hue. In the illustration the leaves of the tree represent the measured steps of chroma upon each branch. (See page 86.)

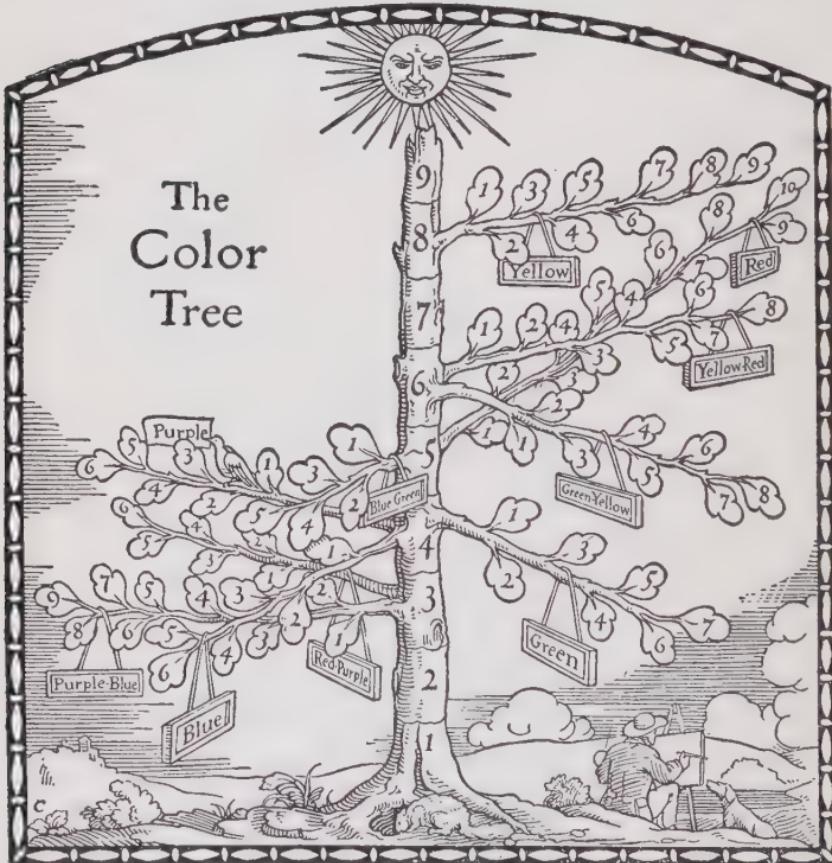
Upon the scale of chroma the number of steps is limited only by the strength of pigments. The strongest yellow pigment in dry form, for example, will reach nine steps away from the neutral pole; but certain dyes on silk or even printing inks and some unreliable pigments may go one or more steps beyond this. As new and more powerful pigments may be



COMPARISON OF CHROMAS

discovered, they will add further steps to the scale of chroma.

We have described each of the three dimensions by which any color may be measured and noted how each



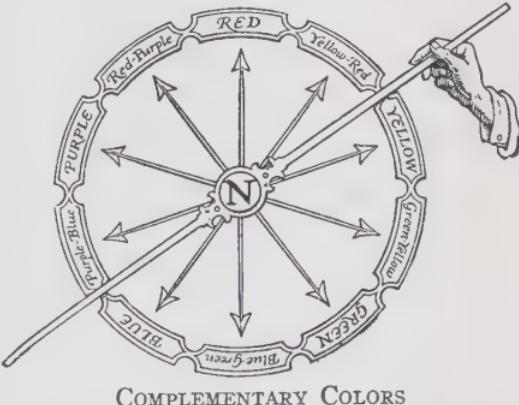
ANOTHER WAY OF REPRESENTING CHROMA

is written in a color formula. It remains only to put these separate notations together and to write a complete color formula embodying all three dimensions. For example, we are given a certain color to measure

and define and we find that upon the scale of hue it is purple-blue. Upon comparing it with the scale of value, we find it is but three steps from the bottom and that it is only two steps away from the neutral gray pole upon the scale of chroma. A complete formula for this color would, therefore, be written $P-B\ 3/2$. It is scarcely necessary to point out the practical advantages of such a system of definite measurement and notation over the vague and variable term in general use borrowed from the vegetable and animal kingdoms, such as plum, olive, fawn, mouse, etc., of which no two persons ever have quite the same idea.

It is hoped that the foregoing explanation of the three dimensions of color will have been sufficiently clear to convey to the reader a distinct mental image of what is meant by the terms, *hue*, *value*, and *chroma*, in order that we may proceed to the study of certain principles of order for the intelligent and harmonious use of color, which grow out of this simple and logical system of measurement.

The above diagram, displaying a circle of the ten regular hues arranged in the immutable order imposed



by the spectrum and reading clockwise, beginning with red at the top, will serve, with but little explanation, to illustrate what is meant by "opposite," or the possibly more familiar word "complementary," colors. The term *opposite* is used preferably in the Munsell System because it is simple and is self-explanatory, as will be seen by reference to the diagram on page 87, where each hue on the circle will be found directly opposite another hue. Thus a straight line drawn from red on the circle of hues through the neutral pole will pass through blue-green, its opposite, or complementary color. A line from blue through the neutral pole will pass through yellow-red and so on throughout the whole circle. It should be noted that each of the principal hues, red, purple, blue, green, and yellow, falls opposite an intermediate hue, blue-green, green-yellow, yellow-red, etc. Now two colors that are thus opposite one another are not only farthest apart on the diagram but are in actual use the most strongly contrasting. It does not matter at what point we draw the line, whether it is from one of the regular hues or from a point between two hues, if it passes through the center it will fall upon the hue or intermediary hue which is its strongest contrast. This may be more readily visualized if we imagine the spindle indicated on the diagram as pivoted on the neutral pole and movable to any point on the circle. The question may be asked as to how it is determined that these colors which fall opposite one another on the scale of hue are, in fact, the most

strongly contrasting colors. The answer to this question will serve to demonstrate the logical foundation of the Munsell System. When any two colors are truly opposite, or at the point of strongest contrast, their admixture will produce a perfectly neutral gray. Though this may be accepted as axiomatic, it can be easily proved with scientific accuracy by arranging two opposite colors on a disc in proportions relative to the chroma strength of each and revolving them with such rapidity that they are mixed and we can not see them separately. If they are truly opposite, they will unite in a perfect gray.¹ Therefore, in view of this fact, the scale of hue has been so composed that those colors which thus mixed with each other do actually make gray are placed directly opposite on a line running through the neutral gray pole.

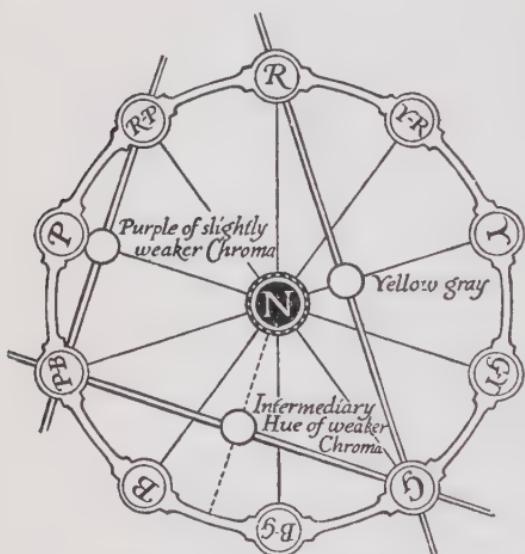
Another question which may arise is what will take place if we draw a straight line between two hues which are not opposites and what would be the result of the admixture of these. This can best be answered by the diagram on page 90, where three different lines have been drawn, no one of them through the neutral center. These lines, it will at once be seen, cross points which are not neutral but nearer to one or another of the hues lying between the ones from which the lines are drawn,

¹ The same experiment may be tried with the actual admixture of pigments, but in this case the result is dependent upon the nature of the pigment itself; that is, upon properties other than those of its color and is, therefore, not scientifically accurate.

and the result of the admixture obtained is noted on the diagram. This will be sufficient to demonstrate the simplicity and logic of the system and to suggest to the reader other interesting examples of it.

In describing the dimension known as chroma, we noted the fact that certain of the hues at their greatest

chroma were much more powerful than others in this dimension and were only to be represented by lines or paths extending beyond the others and outside of the sphere. We found that red, for example, on any step of value is more powerful and requires a longer path



EFFECT OF MIXTURE OF HUES

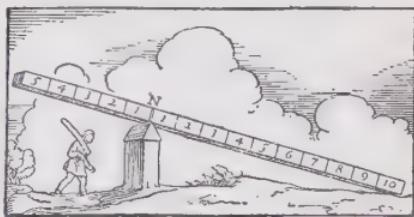
than its opposite, blue-green; and that yellow requires a longer path than its opposite, purple-blue, on the high steps of value but shorter on the lower steps of value. This brings us naturally to the question of balance of color, the *vital* question in all applications of color to practice. Now if we mixed equal parts of red at its maximum chroma with its opposite, blue-green, at its maximum, we would not get a perfectly neutral gray but one in which the red predominated

very decidedly. It would be somewhat like a tug of war in which there were ten men, each representing a step of chroma, on one side and only five on the other. The resulting color would be pulled well over on to the red side because of the fact already stated that red at



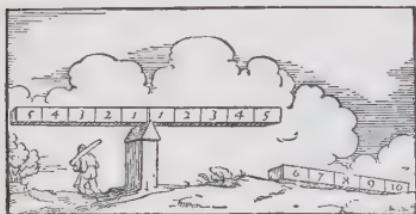
STRUGGLE BETWEEN UNEQUAL CHROMAS

its maximum chroma is more powerful than blue-green at its maximum chroma. If, however, instead of taking equal amounts of the two colors, that is to say, equal quantities of pigment or equal printed or painted areas of each, we take what would correspond to an equal number of steps upon the scale of chroma, we find that they do balance and produce a perfectly neutral gray in which neither the one hue nor the other predominates. Let us glance for a moment at these two diagrams in which a bar represents the line of red and blue-green, with five steps of chroma for blue-green and ten steps of chroma for red, as is the case with these two hues at middle value. The bar rests upon a fulcrum at the neutral point and obviously it will not balance but will fall to the red side, as shown above.



UNEQUAL CHROMAS

But if we cut off steps 6, 7, 8, 9, and 10 from the red side of the bar, it will balance upon the neutral gray, as shown below. This will doubtless strike the reader as so simple and obvious that it scarcely merits statement, but it is just this simplicity that is characteristic of the Munsell System throughout, if approached from the



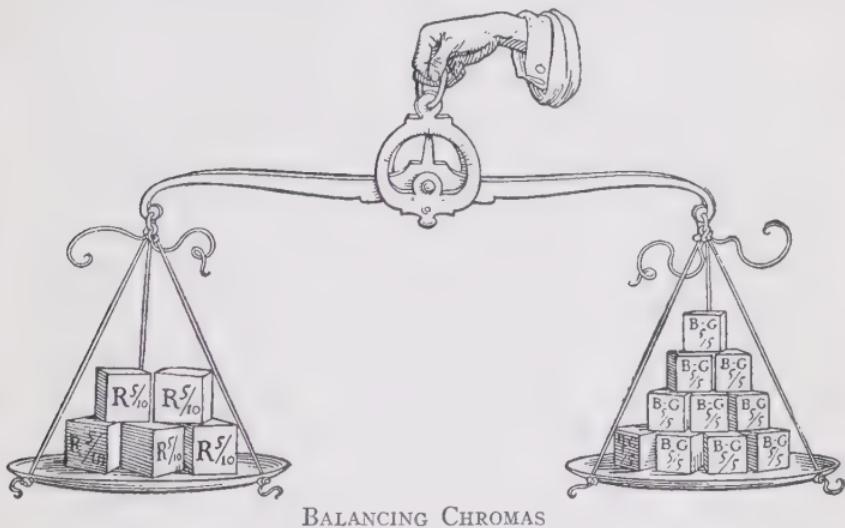
EQUAL CHROMAS

same point of view. This, too, will explain why the diameter of our color sphere is limited to the shortest chroma path at middle value. It will at once be

apparent that within a sphere thus limited all opposite colors will balance because being all of equal length at each level of value no chroma path can be longer than another or outbalance it.

Thus we see how two opposite colors may be balanced by employing only equal chroma steps of each on the same level of value, that *R* 5/5 will balance *B-G* 5/5, or *G* 5/3 will balance *R-P* 5/3, and so on throughout all of the hues. But in practice we may wish to employ a low chroma of one hue with a high chroma of its opposite. In this case we can not resort to the simple expedient of chopping off the excess strength of color on one end of the line but must attain the desired balance by another means. If our purpose is merely to make a perfect gray, we would use a greater amount of the duller color; but if, as in general practice, we wish to produce a balanced color design, we would

employ a larger area of the duller than of the more brilliant color. If we do this in correct proportions, relative to the degree of chroma in each of the colors, we shall attain balance. We may prove that we have attained balance by the fact that everything in our design, thus apportioned as to area and degree of chroma, if mixed together, would produce a perfect gray. Let us suppose, for example, that we wish to



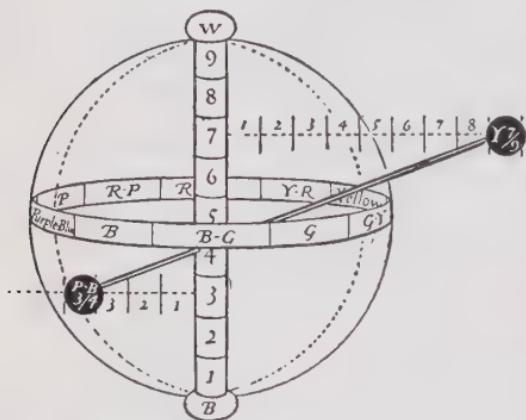
employ in our design the maximum of red and blue-green at middle value. Since we are speaking of balance a pair of scales is an apt figure with which to illustrate the point. Into the pan on one side we will put *five* blocks of red $5/10$, its maximum chroma. In order to balance this we must put into the other pan *ten* blocks of the strongest blue-green which is only $5/5$.

So we find that in order to balance two colors of

unequal chroma but of the same value, we use a larger area of the lesser chroma with a smaller area of the greater chroma and that the proportions are simply in inverse ratio to the degree of chroma of each. That is, we use ten parts of blue-green at $/5$ with five parts of red at $/10$ or, let us say, six parts of yellow-green $3/4$ with four parts of blue $3/6$, etc.

Thus far we have considered only balance of opposite hues on the same level of value; but more often than

not it will occur that we wish to create a design in colors which are not only different in respect to chroma but also on different levels of value, and this difference of value will also affect the question



BALANCE ON DIFFERENT LEVELS OF VALUE

of balance and of the amount of area which each color should occupy in order to attain it. Let us assume that we wish to make a design in yellow of a high value and high chroma, say $Y 7/9$, with its opposite, purple-blue, at low value and low chroma, say $P-B 3/4$. The path formed by a line drawn between these colors, passing through the neutral pole, would not be horizontal in this case, since they are at different levels of value, but would appear as in the diagram.

We now have to take the value into account in determining the amount of area of each of these two colors to be used if we are to arrive at a perfectly balanced color design, and this is done by the simple process of multiplying the chroma by the value of each of the colors. Multiplying the chroma by the value of yellow $7/9$, $7 \times 9 = 63$, and doing the same with purple-blue $3/4$, $3 \times 4 = 12$, we get these two products, 63 and 12. These are applied inversely, as in the former case, and we use 63 parts of purple-blue $3/4$ with 12 parts of yellow $7/9$. The conclusion is that the *higher chroma and higher value should occupy the lesser area and the lower chroma and lower value should occupy the greater area*.

It is not assumed that in printing a complicated color design the areas could all be measured and made to conform strictly to this law or that the effect would necessarily be inharmonious if they did not. This is merely a guiding principle or ideal point at which we may aim in the actual printing of a color design. If we had such a design to print in two colors, for example, and one of the blocks from which we were to print it occupied what we would estimate by eye to be about twice as much surface or area as the other block, it would be a simple matter to choose colors to conform. We might take purple $4/6$ for the larger area and green-yellow $6/8$ for the smaller, or blue $2/3$ for the larger and yellow-red $3/4$ for the smaller, or any other colors which would give us a proportion approximating that

of the difference between the areas of our design. Circumstance will not always permit a strict adherence to the proportions indicated by this formula; but it will rarely, if ever, be impossible to follow the general principle of printing the larger area in the lower value and lesser chroma and the smaller area in the higher value and greater chroma.

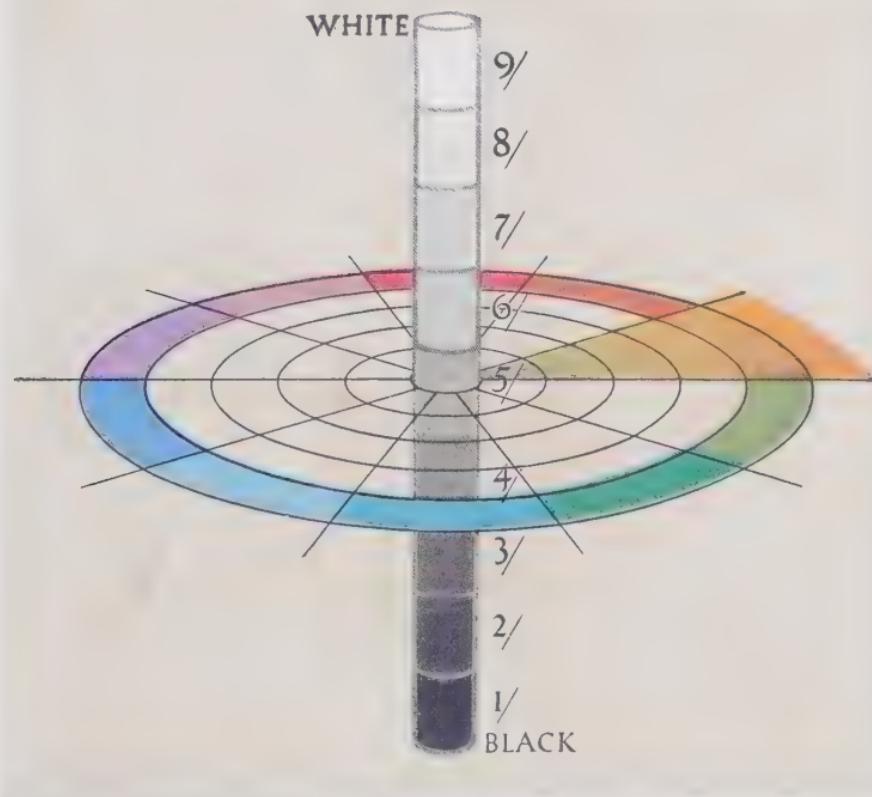
For purposes of illustration we have considered only designs in two colors, but the same rule would apply to three or any other number of colors.

If in the foregoing we have touched upon the combining of colors in use, it has been only by way of explanation of some point in the laws of measurement and balance and it is hoped that no impression has been created that the color combinations possible within the range of the Munsell System are limited to the examples which have thus far been mentioned. This is so far from being the case that any attempt to cover the subject of color combinations possible to this system would be quite futile within the limited scope of this chapter. A logical and orderly system will, in fact, offer a greater range of possibilities for the combinations of colors than could be discovered at random.

We must, therefore, be content to mention here only a few of the directions or paths which offer harmonious color combinations, trusting that the reader may be sufficiently interested by these to seek other possibilities of his own accord.

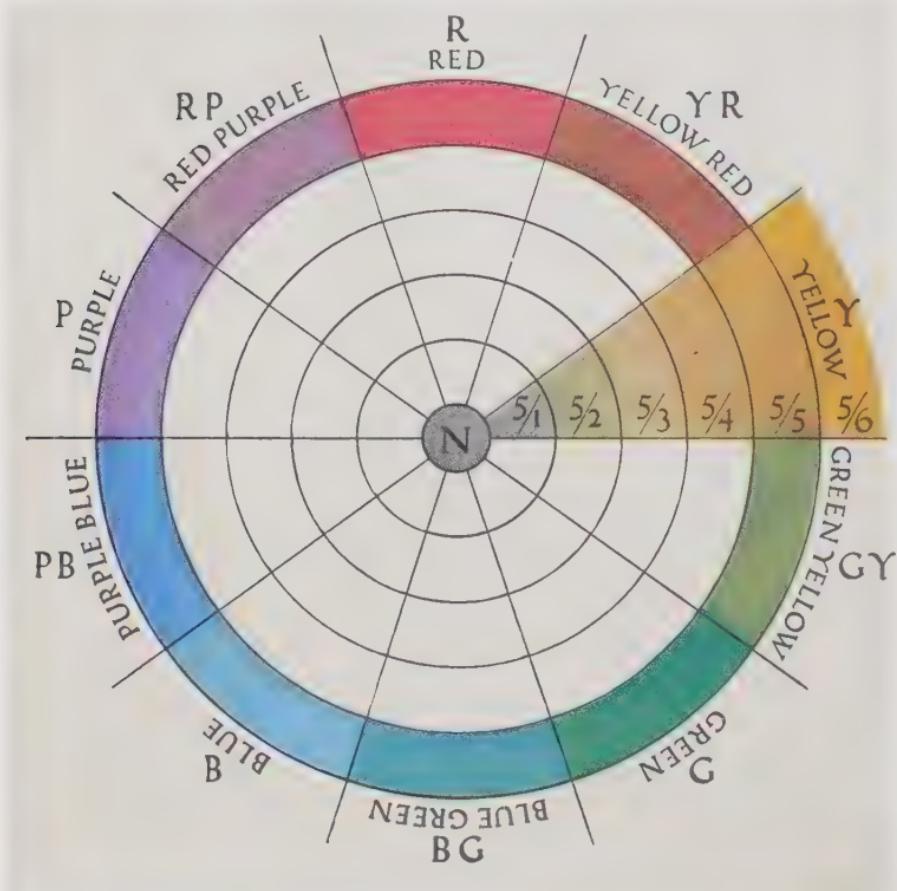
In considering the use of two colors together, we

have repeatedly alluded to those having opposite hues, because this appeared to be the clearest example with which to explain the idea of balance. Opposite colors of equal value, chroma, and area produce a *complementary* harmony. This combination of opposites is



one of the simplest and surest means to color harmonies. We have seen how, if properly proportioned as to amount or area, these opposite colors will balance in perfect neutrality; but another interesting fact with regard to them is that when placed

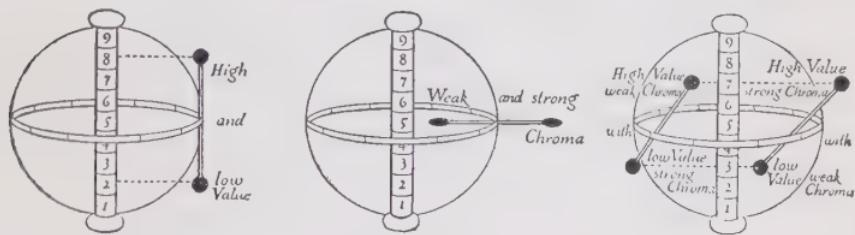
together these contrasting colors tend to stimulate and enhance each other. This effect of contrast may be noted where the ten hues are shown at three middle values, each printed with its opposite. Though none



of these colors is more than middle chroma, the effect is of their being much stronger.

Another very simple and practically infallible series of color harmonies may be made within a single hue.

The resulting color scheme is called *monochromatic*. Thus we may combine a low value of any hue with a high value of the same or a low chroma of any hue with a high chroma of the same. A more interesting combination within a single hue is that of a low value and low chroma with a high value and high chroma or vice versa. Experiments with the possibil-



SUCCESSFUL COMBINATIONS

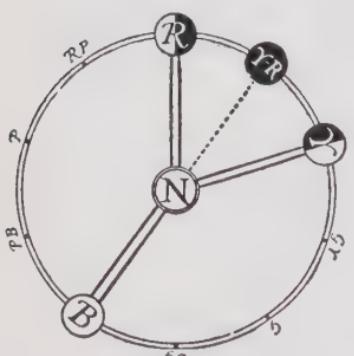
ties of single hues will yield very interesting results in the great variety of colors thus obtainable.

Successful combinations can also be made between what are known as neighboring hues, that is, any hue with the hue which immediately precedes or follows it on the scale — green with green-yellow, red with yellow-red, yellow with yellow-red, etc. These may in turn be varied by taking them at different steps of value and different steps of chroma. In the same way, hues may be combined with neighboring intermediary hues. In all of these cases the harmony depends upon likeness rather than contrast, as in the case of opposites. Such color schemes are called *analogous*.

The use of three or more colors will present a problem at once more complex and more interesting and which,

if approached in any regular order, may assuredly be solved harmoniously. One method is to choose a certain restricted field of hues such as yellow to red, for example, and then to select within this field regular steps of hue, value, and chroma which bear an orderly relation to each other.

The principle governing the balance of opposite colors will also apply to combinations of three colors. Let us assume that blue is required as one of the colors in a three-color combination. We find that its opposite



EVALUATING PROPORTION OF COLOR

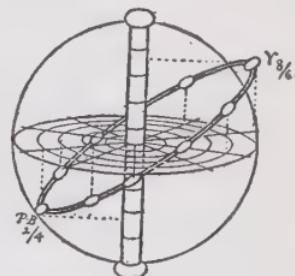
hue is yellow-red, and as this is merely an admixture of yellow and red, it follows logically that the use of these two hues, with due regard to proportion of areas or degree of chroma, will yield a perfect color balance. In order to determine the correct proportion of areas, or degree of chroma of red and yellow that will balance

harmoniously with our blue, we may proceed exactly as in the case of a two-color combination of blue and yellow-red; but in this case we would divide the amount or strength of a correct yellow-red between our yellow and our red. For example, let us take blue $4/5$ and assume that we wish to combine it with a yellow and a red of higher value and greater chroma, say $6/7$. Following the rule already stated, we multiply the

value of our blue by its chroma ; that is, 4×5 , which gives the product, 20. Now taking its opposite yellow-red at $6/7$ and doing the same we get $6 \times 7 = 42$. If we were combining blue $4/5$ with yellow-red $6/7$ we would use their products inversely, that is, we would use 42 parts of blue $4/5$ with 20 parts of yellow-red $6/7$. This gives us the amount of area for yellow and for red, because if we would use 20 parts of yellow-red, $6/7$, it naturally follows that we would use 10 parts of red $6/7$ and 10 parts of yellow $6/7$ to effect the same balance.

We may note one more interesting point which will be of use in connection with the combining of several colors two of which are of opposite hues.

In studying the dimension, chroma, we have seen that all of the hues cross and meet in the neutral pole which represents the point of their union. It follows naturally that the nearer our colors approach to this common center (the less in degree is their chroma), the more nearly they are related, and the easier it becomes to harmonize them. Now two of our hues, being direct opposites, will balance each other very well ; but in the choice of other hues between these we shall be in danger of discord as we leave their immediate proximity and arrive at points halfway between them, where we find neither the balance of proximity

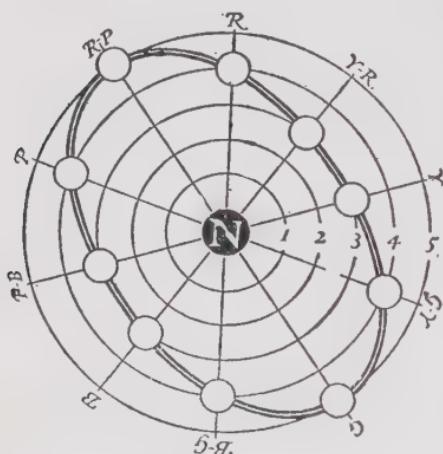


ELLIPTICAL PATH BETWEEN OPPOSITE HUES OF HIGH AND LOW VALUE

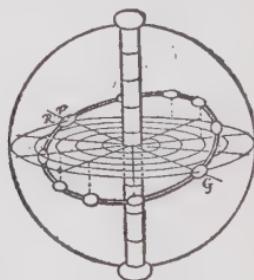
nor of contact. We may avoid this danger in the selection of our colors between these opposites by choosing steps of chroma for them which shall be nearer to the neutral pole and approach to within, let us say, three steps of it. The line thus traced between our opposite hues will form an ellipse, and colors taken anywhere on this line will safely accord.

This may be more readily comprehended by a glance at the diagram above. This suggests variations in the application of the rule such as are indicated in the smaller diagram at the side, where the elliptical path is shown tilted to different levels of value.

A further study of color as thus organized and measured will assuredly be rewarded by the discovery of many interesting possibilities, which we have failed to note here. The subject is endless and in a discussion such as this, a few suggestions must suffice. The deeper we penetrate this always fascinating subject, the more clearly we shall see that



THE ELLIPTICAL PATH



ELLIPTICAL PATH BETWEEN OPPOSITE HUES OF SAME VALUE AND OTHER HUES OF HIGH AND LOW VALUE

color *harmony* is only another term for color *order*; that order will yield order; and that any path in the color sphere and some paths outside it which are themselves orderly in form and interval, will lead through a series of colors which accord and when used together will render the agreeable sensation which we seek in all color relations.

QUESTIONS AND EXERCISES

- (1) Why is a knowledge of color desirable?
- (2) Define color. (Refer to the encyclopedia.)
- (3) What is your opinion of the Munsell Color Theory as a means to color study?
- (4) Define and illustrate what you mean by the term *hue*; *value*; *chroma*.
- (5) Explain the proposition that the name of a color should describe the color as accurately as possible.
- (6) Name the colors used on the cover of this book. Do you think them harmonious? Why?
- (7) Using paints or crayons, make a design for a book cover using a complementary color scheme.
- (8) Give approximate Munsell formulas for the colors used in the design required in 7.
- (9) How is color harmony produced?
- (10) Make in color a decorative design for application to a textile fabric using an analogous or a monochromatic color scheme. The pattern should be suitable for embroidery for batik, for stencil, or for wood block.
- (11) Carry out in materials (linen, silk, cotton, or other textile and thread or dies) the design required in 10.

CHAPTER FIVE

DESIGN IN DECORATIVE CONSTRUCTION

One element of decoration that is always present in objects of utility is color, for color all objects must possess if they are to be visible to the human eye. Metals like gold, silver, platinum, nickel, copper, and alloys, such as brass and pewter, are themselves so beautiful in color that it is often as futile to attempt to improve them by artificial means as it would be to attempt to improve the appearance of the rose by staining its petals or altering their texture. No wood is so beautiful in color, however, that its natural beauty can not be improved by dressings that bring out the charm of its grain, deepen its luster, enrich the glow of its hue, and dull or brighten its tints and shades. The natural colors of fired clay are for the most part of little artistic value except as exemplified in brick, tile, and terra cotta products which, for many practical purposes, are covered with a thin, transparent glaze. Color is also a most important consideration in the formation of products in the textile arts.

From the facts given above it will be seen that color in the materials of construction can scarcely be considered apart from the things themselves, except where

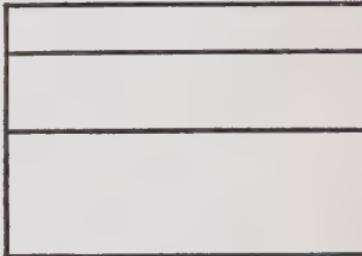
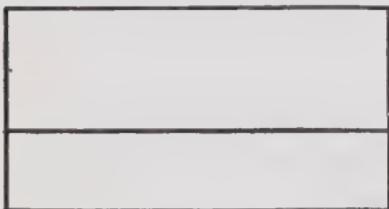
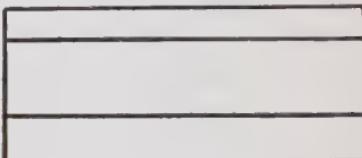
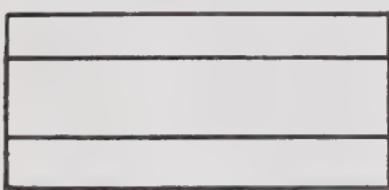
it is applied. In this instance color becomes decoration, and as such it will be treated in the next chapter.

It is the purpose of the present chapter to show how the application of the principles of symmetry, balance, and rhythm and the resulting unity and harmony give lightness and grace to articles of utility without sacrificing any needed strength of materials or vigor of line. Undecorated objects intended for even partly decorative use must by all means be included among the objects of utility, for they must be considered as coming under the same æsthetic rules. Examples of such articles are found in unornamented vases in metal or porcelain for the mantelpiece or table and in most undecorated objects generally. In this sense all unornamented products of industrial art may be considered as decorative. A distinction is made between decoration in the sense of ornamentation and decorative construction as the refinement of shape.

The subject of decorative construction will be treated briefly under the three heads : mass, contour, and surface.

Every object of utility has three dimensions, and possesses, consequently, body, or mass. Though purpose determines usually the form of a body, or mass, it is the function of art to make this use-accordant shape as pleasing to the eye as possible. To design the mass of a rectangular object, the student should construct a rectangle, horizontal or vertical as determined by the purpose that the contemplated object will serve, drawing the main horizontal and vertical lines of the object,

say, of a table, a chest, a davenport, or a chair; or, if the object is irregular in outline like a piece of pottery, the rectangle must be made just large enough to inclose the object at its greatest width and height. Minor projections beyond the rectangle will be considered as mere appendages, and for the present they may be disregarded.

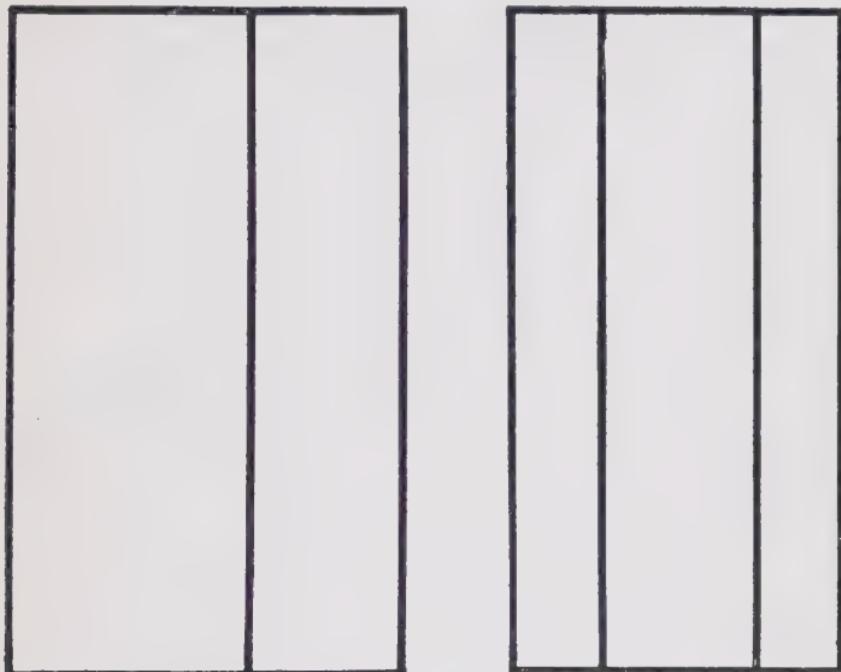


HORIZONTAL SUBDIVISIONS OF HORIZONTAL MASSES

To attain beauty of proportions in a body, or mass, it is an accepted rule that a ratio so simple and recognizable at sight as 1 to 1, or 1 to 2, or so meaningless and difficult of perception as 10 to 11 is fundamentally uninteresting and also inartistic. Such ratios as the following are held to be artistic because they are at once distinguishable yet elusive enough to be interesting; 1 to 3, 3 to 5, 5 to 8, or 7 to 10. The mass of an object is often made more beautiful by being divided vertically or horizontally or both vertically and horizontally into pleasing subdivisions. In order to do

this in the best way a need is felt once more for the rules for proportion.

Where the mass of an object is thus divided into two parts according to the rules for proportion, one part



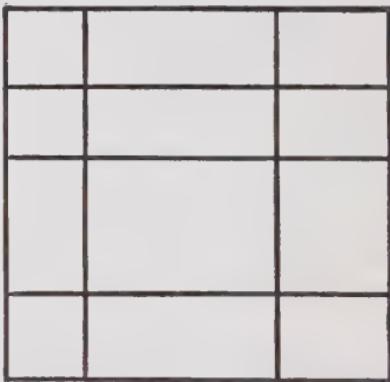
VERTICAL SUBDIVISIONS OF VERTICAL MASSES

is sure to be dominant and the other part subordinate. If there are three subdivisions, the two subordinate divisions should ordinarily differ in area. When they are separated by the dominant part, the ratio between the two lesser parts should be interesting and agreeable, say 2 to 3, or 3 to 4, according to the purpose as well as the appearance.

The accompanying illustration (page 106) illustrates

some possible artistic horizontal subdivisions of horizontal masses; the figure on page 107, some possible vertical subdivisions of vertical masses. Frequently, both horizontal and vertical subdivisions are used in a single design (below).

Purpose or symmetry or both may dictate two equal vertical subdivisions, as in a bookcase or a cupboard



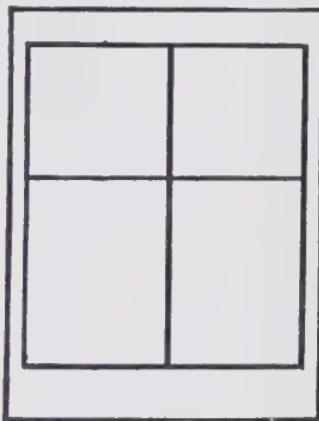
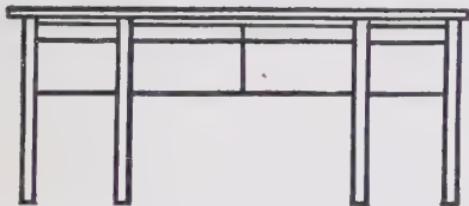
HORIZONTAL AND VERTICAL SUBDIVISIONS OF VERTICAL AND HORIZONTAL MASSES

having two doors or in a sideboard with dominant center space and two equal end spaces. In such a problem in design, artistic appearance may also be enhanced by horizontal subdivisions in suitable ratios (page 109).

The division of the mass of an object by vertical or horizontal lines gives the designer a rough-and-ready method of securing agreeable proportions of parts, but it is, of course, merely a point of departure in the development of a satisfactory design. Superfluous material must be eliminated, else the resulting object will be

crude, heavy, and probably clumsy in appearance, certainly anything but artistic. In furniture it would be like those unwieldy tables, chairs, and benches that sufficed for early Englishmen or like the Mission style at its worst.

When the quantity of material has been reduced until it does not exceed what is necessary for both real



VERTICAL SUBDIVISIONS OF MASSES IN FURNITURE

and apparent strength, artistic quality is promoted by the refinement of outline or contour. The lines are softened and made graceful by the use of artistic curves, or curves of force as they are sometimes called when they promote efficiency in the performance of function. This constitutes the first and most important use of the curve. The term *force* as it applies to lines may be defined as artistic worth expressed in terms of linear movement or growth. Such worth is usually promoted by change in curvature as in a long, flat, or weak curve

terminating in a short vigorous curve (as below). The volute is a good example of growth in which there is a constant change in curvature. The curve having the least variety and hence the least artistic value is that made with compasses. It is usually to be avoided

save where function makes it necessary, as in a wheel. A segment of a circle is less interesting than a segment of an oval, though the segment of the oval is less interesting than some other more forceful curves.

Where curves are a part of the natural form of an article of utility, a varied and interesting curve is always to be preferred to one that is monotonous and uninteresting. It will suffice to call attention here to the curves that promote function, such as those on the backs of chairs which correspond to the curves of the human body, the bowls and handles of spoons, the



PEWTER CANDLESTICK
Designed and executed by
L. H. Vaughan.

bodies of articles of pottery, together with their handles, spouts, or other appendages.

The second artistic use of the curve consists in its employment to smooth out the angular break which is formed when adjacent surfaces are not in the same

plane or when vertical planes rise or drop from horizontal planes. The moldings framing the panels of doors and cabinets furnish an example of the curve which makes easier the transition from one plane to another. The curved bracket performs a similar service in uniting pleasantly vertical with horizontal surfaces. The bracket is often used in mantelpieces, bureaus, tables, and chairs. It is also found in a different form in the molding employed to effect an artistic junction of the side walls and the ceiling of a room.

The enrichment of surface in decorative construction is also largely a matter of the disposition of lines. Sometimes it is concerned with the harmonious subdivision of areas merely for æsthetic reasons, but more often it is for structural reasons. The breaking up of the mass of an object often adds interest to what would otherwise be unity devoid of variety. Oneness or sameness spread over an expanse of surface becomes tiresome, while an interesting variety brought to unity at once enlivens and pleases and is artistic.

There is danger at this point of losing sight of the real difference between ornamentation, or decoration in the narrow sense, and surface construction which we choose to call decorative because it produces a beautiful result. For illustration, turn to page 112. Here we have a Japanese cabinet supported by a table. The cabinet, like the table, is profusely "decorated" both in contour and in surface. The whole is capped by a mountain, which in turn is wreathed with snakes. The



Courtesy of Minnie E. Neal
JAPANESE TABLE WITH CABINET

surfaces are carved and the lines broken by carvings or moldings. All this is pure ornamentation and not decorative construction at all. But now observe the vertical subdivisions of the mass of the cabinet. No two divisions are alike; each is varied while all are brought together in an artistic whole. The vertical division at the left is higher than the one at the right. Both are divided differently. The drawers differ in width while the single door at the left, nearly square, is matched by two vertical oblong doors at the right. This produces a balance without symmetry. The central part of the cabinet is subdivided into interesting ratios but with some apparent disregard of utility. The curve in the middle shelf is in accord with the fact that the right-hand vertical part is shorter than that at the left, though at the same time it reduces the utility of the given space. All this is constructive design, more or less decorative.

An illustration of the architectural subdivision of wall areas for artistic purposes is found in the room shown on page 114. In this room unity of wall space has been broken up into panels, and the whole is thus brought into an artistic unity made up of a number of harmonious rectangular parts. The furniture in this room illustrates the use of curves of force both in the construction that promotes service and in the beauty that effects a pleasant transition from vertical to horizontal planes.

The student of design will find in every artistic



Courtesy Good Furniture Magazine

INTERIOR SHOWING AN ARTISTIC SUBDIVISION OF WALL SPACE

product of industry that the most fundamental elements of its beauty are those of decorative construction involving mass, contour, and surface. He will dismiss, once for all, any impression that he may have had that nothing is beautiful that is not ornate or elaborate in decoration. He will even concede that in good decorative construction, with mass in harmonious proportions, contours refined, by curves of force, and areas brought to artistic unity through subdivision into minor areas of agreeable proportions, we might almost dismiss entirely the idea of ornamentation of articles of utility. At any rate, were this done, it is certain that we would not have to bid farewell to beauty in such things.

Finally, nothing is more advantageous to the designer than the habit of analyzing every object into its constituent elements of mass, contour, and surface: What may at first appear to be vague and difficult will in the end become so natural and inevitable as to seem instinctive. Just as a good architect can not rest satisfied with an inartistic design for a building, so the designer of an article of utility is finally rendered artistically incapable of designing an ugly product.

QUESTIONS AND EXERCISES

- (1) Examine the mass subdivisions in rectangular objects, such as tables, cabinets, desks, bureaus, chiffoniers, refrigerators, phonographs, etc., and make diagrams of the pieces to show the division of space. Compare these divisions with those given on pages 107 to 109.

- (2) How is symmetry attained in the ironwork illustrated on page 27? Is the result harmonious? Why?
- (3) Point out on page 44 how decorative curves are used in tools, contrasting the recent with the earlier examples given.
- (4) Compare the Greek with the Chippendale chair (page 56 and page 57). Explain how decorative ends are realized in these chairs through curves of contour.
- (5) Compare, as in 4, the furniture of Sheraton and of L'Art Nouveau (page 11 and page 70).
- (6) Contrast the artificiality of design found on page 65 with the art quality shown on page 64. What incongruities are found in the stoves and what excellences in the clock? Discuss the contours used on the two pages referred to.
- (7) Compare the decorative construction in mass and contour found in the first automobiles with those of the models of 1923. What do you think are the chief causes of these startling contrasts in artistic value?
- (8) Point out the chief differences in decorative construction between the Sheraton chair shown on page 13 and the Heppelwhite chair shown on page 130. Give some reasons why either is to be preferred to the other.
- (9) Make a decorative design for one of the following: leather cardcase, ivory paper knife, china vase, perforated gold lavallière.

CHAPTER SIX

DESIGN IN DECORATION

Literal representation has one purpose, while decoration has another purpose radically different. A painting or a piece of sculpture represents an object so that the observer seems to perceive it as it actually is or as it is conceived to be, while a decoration enhances the beauty of an object. A picture painted to show objects as they actually are would not be a true decoration when placed upon another object, for the eye of the observer would become so absorbed in this literal representation that he would lose sight of the thing it was intended to decorate.

To illustrate the true purpose of decoration, refer to the decorated china shown on page 118. The coffee set at the left is apparently Satsuma ware¹ with a bird motif applied as decoration. The birds in blue appear above and below the tendril of a vine. The blossoms are of a light, weak red, while the bands are in gold. But the purpose of the decoration is to turn the mind of the observer, not to the representation of the birds

¹ A pottery of yellow hue with a hard glaze. This ware was made first in Satsuma, formerly a province in the Japanese island of Kiushu.

or the blossoms as such, but rather to the beauty of the ware as thus intensified by ornamentation. The result is not a bluebird painting but a bluebird decoration, the purpose being not to represent what actually is but rather to enhance the beauty of the product that it adorns.

If the aim of the realistic painter is direct, vivid representation, then the form must be true to that of the



Courtesy of Minnie E. Neal
HAND-DECORATED CHINA

object represented. A knowledge of perspective will enable the painter to represent form in its correct relations. Color must be true to nature.

But the decorator must treat form, perspective, and color in a different way if his objective is to enhance the beauty of the product to be decorated. Look at the china shown on page 120. Evidently the decorative form need not be a representation which is true but only near enough to suggest what the decorator has

in mind; in other words, the forms of nature and of reality may be conventionalized in such work. We often come upon the egg and dart motif of the Greek as well as the lotus of the Egyptian. Were the form actual rather than conventional, we should think of the natural object. If the representation is conventional or just enough like the real object to suggest it, we shall be free to think only of the beauty of the decorated object.

Accurate representation is out of place in industrial arts decoration. Is it not because the Orientals regard pictures as decorations for given places that they are disposed to neglect perspective? We are inclined to think of paintings or pieces of sculpture as more or less independent of their environment, since most of us have been taught to regard them as representations of reality. When we come to think of these as decorations, we shall think less of their realism and more of their decorative values. Then we shall not demand color effects that are always true to nature but those that contribute most generously to decoration. Decorators use freely all hues with black, white, and gold, mindful only that the colors shall harmonize. Thus the china plate in the illustration (page 120) has as decoration a vine or scroll in gray with medallions of flowers in natural, though unnaturally soft, colors.

The distinctions that have been made above between representation and decoration hold likewise between painting proper and mural decoration although it is

perhaps true to say that the pictures which most resemble good mural paintings are the best for hanging on the walls. Brangwyn's mural paintings in Mulgardt's Court of Abundance at the Panama Exposition were good examples of mural decorations. Here are some of the things that Neuhaus has to say of them



Designed by Frank Graham Holmes. Executed by Lenox Inc.

AMERICAN CHINA

These examples of American china were taken from the Fifth Exhibition of Work by Manufacturers and Designers. The designs were based on study of the collections in the Metropolitan Museum of Art.

in his *Art of the Exposition*: "Brangwyn's canvases are a veritable riot of color, full of animation and life. . . . He knows how to approach the extremes of possibility in pictorial decoration without losing sight of certain elements of repose. . . . There is a passionate love

of pure color juxtaposed with fine feeling for complementary colors of great intensity." This is surely a description of what is primarily decoration and realistic painting only secondarily. Brangwyn's method of color separation into many typical and intermediate hues by the introduction of broad contrasts of browns and grays results always in a subtle color harmony in all of his mural decorations, no matter how strong the individual hues may be.

To make still more clear the distinction between mural decorations and traditional picture painting, contrast the foregoing description of Brangwyn's work in the Court of Abundance with the painting by Gari Melchers reproduced on page 122. Here is correct form and perspective, with faces that might even be portraits, devotional attitudes, and such colors as any peasant assemblage might show. Look at the old man at the right of the table, with his bowed form, his wrinkled face, and his toil-worn hands, betokening a body at rest and a soul at peace. Everything contributes to representing the scene as the painter himself conceived it. With Brangwyn's painting, however, everything contributes primarily to the decorative effect ; first a spirit of joyous hilarity to accord with that of the Court itself, and second, a vividness of color and a conventionality of form that make his works true decorations for the walls they are painted to adorn.

The same principles of design that apply to ceramics, picture-painting, and mural decoration apply with equal



GARY MELTON

COMMUNION SERVICE, IN A EUROPEAN VILLAGE

force to furniture, silverware, textiles, and, in short, to everything that is subject to decoration.

We have seen that decoration generally involves the enrichment of the surface of an object. More rarely contours are similarly enriched. The kind and amount of such enrichment is determined largely by two factors: first, by the character of the product and, second, by the changes effected by modern factory production.

To illustrate how the character of the product influences its decoration, observation shows that automobiles, tools, and machines are to-day rarely decorated except by color and finish; furniture, silverware, and glassware for daily use are decorated but slightly; while textiles have to some extent at least exchanged elaborateness of pattern for greater variety and delicacy of texture and color. Pottery, owing to the nature of the material from which it is constructed and to the individual methods of its production, still finds decoration both practicable and desirable (page 124).

For verification of the fact that modern taste demands restrained decoration, the designer has but to contrast the utensils, machines, household furnishings, and textile products of to-day with the historic examples of these things as depicted in Myer's *Handbook of Ornament* or a similar book of reference material. He can find further and more convincing evidence by visiting the museums in which are displayed numerous examples of ancient and mediæval industrial art. Where historic peoples were often ornate and complex

in their decoration, we Americans have in our best work become unostentatious and sincere. Where the custom was to crowd a surface with all the ornament that it could be made to hold, we are disposed to reduce the amount of ornament to the lowest limit, more



DECORATIVE POTTERY

These vases were designed and executed at the Newcombe Pottery of Tulane University.

than making up for what is lost in elaborateness by refinement of form and of decoration, if indeed decoration is used at all. In other words, our best construction is in itself decorative rather than adorned by superfluous ornamentation (see Chapter Five).

Aside from color, which is treated in Chapter Four and in the opening paragraphs of Chapter Five, the

elements of surface enrichment are classified to include motifs derived from geometry, natural objects, and man-made objects. These will be discussed somewhat in detail.

The first and simplest form of ornamentation is the geometric figure as illustrated in the rectangle, triangle, circle, hexagon, and octagon. These and numerous other geometric forms are used in three distinct ways: as continuous and ribbon-like bands, or borders, for surface boundaries; as patterns for inclosed spaces such as panels; and as continuous surface patterns such as are used in wall paper and textiles.

The second group of elements of decoration, or those derived from natural objects, may be divided into three classes as follows: the flora of ornament, in which plants and their parts furnish the motifs such as stems, leaves, and petals; the fauna of ornament, in which animal organisms furnish the decorative motifs, as fishes, lions, birds, serpents, and dragons; and the human figure. In all of these classes of decoration, the designer usually modifies the forms to suit the character of his decoration. Flowers and leaves are conventionalized to accord with the material used and with the purpose of the decoration. The mediæval artist-artisan took apparent delight in distorting the human body and features into grotesque caricatures, a practice which was much praised by Ruskin, who saw in it an almost unlimited field for individual expression on the part of the craftsman.

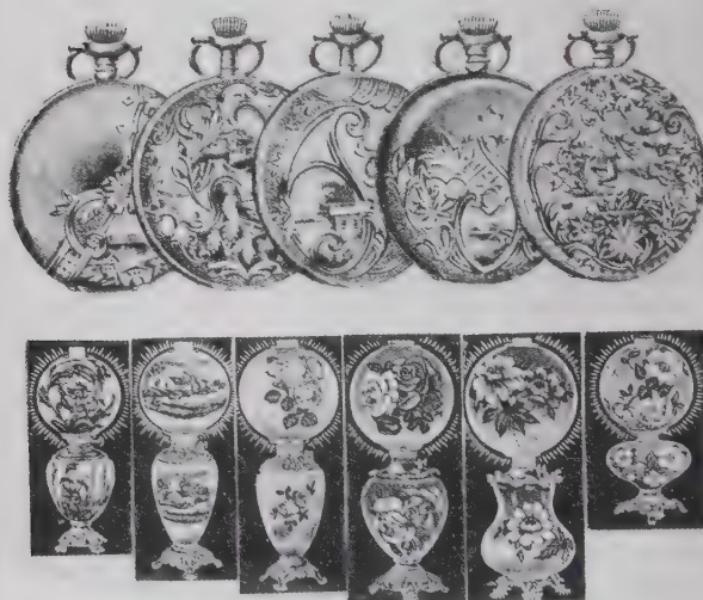
The third and least important group of elements used in decoration consists of man-made objects, such as are sometimes used in the ornamentation of trophies and trade-marks and other symbols. Thus oars may be appropriately used for a rowing trophy; winged heels for racing cups; swords, arrows, rifles, and cannons or flags for military decorations and soldiers' memorials; Cupid's bow and arrow are symbolic of love; a palette and brushes, of the work of the painter; the T-square and triangle, of the work of the architect; the balance and retort are symbolic of chemistry; the hammer or other tool, of labor; the book, of learning; and the beehive, of industry.

The big classes of ornament mentioned above contribute to the artistic merit of objects only when the designer employs judiciously the Greek principles of beauty described in detail in Chapter Two. Rhythm is attained when a pattern is so constructed as to lead the eye naturally and easily in any desired direction. Balance is assured by the artistic subdivision of the geometric forms, oblong, triangle, square, circle, etc., or by good composition of natural or of man-made forms. Good composition may be produced either by symmetrical or by unsymmetrical, or occult, arrangement. Occult balance is used in architecture in the arrangement of openings where use renders it advisable, but it is somewhat more rare in abstract decoration. One of the commonest as well as most artistic types of symmetrical balance is produced by using the Ionic

volute or a similar curve of force and its reverse on either side of a properly located vertical line. Harmony involves not only the beauty that results from the symmetrical arrangement of curves or figures and from good composition in the decoration itself; it involves also a perfect accord of the decoration and the nature and use of the object and the material of which it is made. Unity is attained when the ornament fits the object it is made to adorn and when both the object and its decoration harmonize with the purpose to be served and the environment in which the object is to appear.

A cursory examination of almost any mail-order catalog will usually reveal numerous examples of unfit decorations. Turning to the rug department, one finds rugs with representations of lions, cats, or dogs woven into them. One rug seen by the authors portrayed a dog in a barrel with a cat and a saucer of milk alongside. Think of having a combination like that, even in the imagination, under one's feet! What indeed have dogs and cats to do with rugs designed for the use of man? Beds of roses on Brussels carpets must also be unfit as decorations, for roses should not be trodden underfoot. Watches are ornamented with engravings of birds, beasts, and scenery, castles, crags, and cottages, hardly any of which are even remotely suggestive of the nature or use of the watch. Lamp shades are particularly subject to unfitting decorations, the bouquet of flowers being a favorite motif (page 128).

Since the coming of the oriental rug, however, our American factories have been turning out thousands of rugs and carpets possessing the finest decorative qualities, because the patterns, which have a geometric



EXAMPLE OF UNFIT DECORATION

foundation according well with the shape of the whole, are composed of delicate forms whose beauty is enhanced by subdued and harmonious color schemes. In such rugs form is subordinated to color. The best of these rugs are those which are designed particularly for our American environment. In such design the



AMERICAN RUG

This rug was designed by Frank Haas and executed by M. J. Whittall Associates. The design was based on a study of the collections in the Metropolitan Museum of Art, and the rug was displayed at the Fifth Exhibition of Work by Manufacturers and Designers.

oriental rug is often used to furnish the designer with inspiration (page 129).

Mail-order houses and even some of the retail stores still find it more or less profitable to handle atrocious furniture. Compare this illustration of a Heppelwhite

chair (this page) with the pretentious furniture that one sees illustrated in the mail-order books. The decorations on the Heppelwhite chairs are simple and refined, delicate, controlled, and in perfect accord with the forms decorated. Here is a description of a chair advertised in a current periodical: It is "a kind of Morris rocking chair," priced at nine dol-

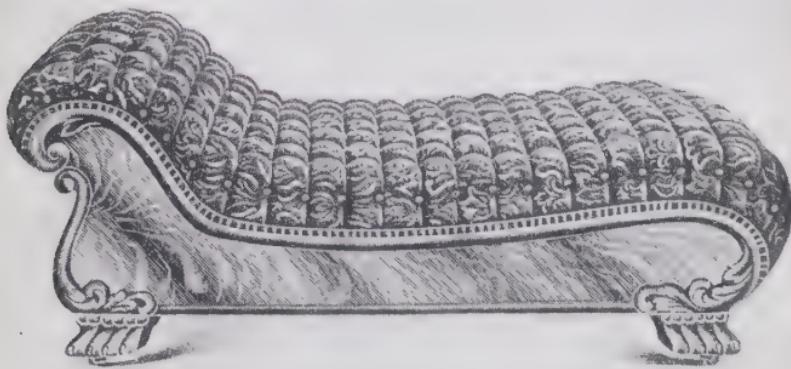


Courtesy of Metropolitan Museum of Art
HEPPELWHITE CHAIR

An example of English furniture of the seventeenth century.

lars and eighty-five cents. The wood, very heavy, is grained to imitate quarter-sawed oak; the upholstery is imitation black leather, wrinkled into ruffles and rosettes. The front legs are elaborately machine carved in arbitrary patterns with Assyrian faces looking right

and left near the tops, and the legs meet the rockers in gigantic lion claws. The back legs are similarly ornamented, so that all together one could purchase some forty pounds of imitation and pretension for nine dollars and eighty-five cents, together with the assurance from the advertiser that the chair is worth more than is asked for it. Here is a sofa (below), belonging



TYPICAL MAIL-ORDER SOFA

to the same order, that might well be named "The Giant Caterpillar." The use of lion claws and heads, eagles, peacocks, sphinxes, human faces, and other grandiloquent symbols upon furniture is but a vulgar and inartistic application of motifs once used effectively on furniture of state where formality and emblems of power and authority were in good taste. Good taste now requires that the decorations on furniture, silverware, and household fixtures generally shall

be modest and unobtrusive. It would seem that appropriately decorated china can scarcely be made to cost enough to suit the prodigal spender; for the gilding on plates, cups, and saucers, which is beautiful when confined within proper limits, is extended until it covers the entire surface, and the ware is made to look like gold rather than china.

The manufacturers of wall paper, on the other hand, sometimes cater to the unwise ambitions of those who have little to spend by giving them too much display for their money. This they do by making the figures of the decoration too large, too striking in appearance, too far apart, or too pronounced in color. In these ways they defy every law of fitness, for ostentation is never artistic, while the first requisite for a good background is that it shall be subdued and flat. It is the plane against which the furnishings of the room and the clothing worn by the occupants are seen. For this reason solid and subdued colors on the wall are to be preferred to any but the most appropriate decorations.

Decoration has an important part to play even in one's personal appearance, where adornment is often a matter of no little significance. No American girl would have any difficulty in renouncing for her own use most of the personal trappings seen on this young woman of Ceylon (page 133). There is something to be said, however, for the fitness of these ornaments for this girl. Her tastes are the tastes of her people; dark skins permit decorations that would be unsuitable

for white skins ; the nose pendant would not interfere seriously with her comfort, for while eating she would remove it ; her arms would not be used for labor when adorned for the festival, while people of the tropics are disposed to regard shoes as unessential either for comfort or decoration. Western nations condemn oriental decorations of the person as barbaric, without stopping to consider whether there are any good reasons for what is so severely criticized. Most of us are unaware that gold and silver coins wrought into ornaments are almost the only forms of property available for the lower classes of society in India, because untaxable and easily concealed. Chivalry, moreover, forbids robbing women of their trinkets. It is not strange, therefore, that not only ears, neck, fingers, and wrists but also nose, arms, ankles, and



Courtesy of the Art Institute of Chicago
MAID OF CEYLON

toes should be utilized for displaying this form of wealth. What these poor people possess they must somehow manage to bring to the admiring view of friends.

In this connection it might be well to consider the fitness of Japanese furniture to our American conditions.



CHAIR ORNAMENTED WITH DRAGONS

At the Panama Exposition there were displayed carved Japanese chairs which were offered for sale at from four to six hundred dollars each, while one settee was marked fifteen hundred dollars. Is it desirable to have such furniture in the American home, at any price? To this ques-

tion it might be replied that what is here called furniture is not, in the strict sense, furniture at all, but bric-a-brac. When Commodore Perry went to Japan in 1851 there was not, so far as he could find, a chair in that country, and it is probable that with the majority of the inhabitants there are none to-day. The Japanese sit on floor mats, not on chairs. The forms of the chair (above) and the settee were bor-

rowed from the West, decorated with Japanese dragons and sent back to the West for sale to wealthy and undiscriminating Americans. Are Japanese dragons fit decorations for the environment they would find in the American house? Some people appear to have become so fond of the really beautiful oriental decorations on oriental products that they jump to the conclusion that anything Orientals are willing to sell must be artistic.

There is one consideration only that sometimes makes inappropriate oriental products tolerable — that which was first designed for use is diverted from its original, utilitarian purpose and becomes a curiosity, a relic, or possibly an object of isolated art. Thus a Turkish prayer rug, made for the devotions of the faithful in the desert, may become an object of virtu in an American home. Nobody thinks of using it to kneel upon but only to look at. In the same way it is conceivable that people of good taste might enjoy owning and looking at a Japanese-American chair or settee, though it would be no ground for artistic censure should one rigidly exclude such hybrid products and select from oriental things only those which conform to our present æsthetic ideals.

However helpful the foregoing discussion may be, it is evident that in the end each of us must make individual choices of products independently. One can not escape personal judgment; nor is it desirable that he should, for if any set of rules could decide once for all and absolutely whether a given decoration is fit or unfit,

then individual taste would cease to be. The facts and rules contained in the present volume are therefore regulative, by which is meant that they are intended to serve as aids to judgment. They do not decide what is or is not beautiful, but they do give criteria by which all can make decisions for themselves.

QUESTIONS AND EXERCISES

- (1) Distinguish between pure decoration and decorative construction. Contrast Chapters Five and Six.
- (2) American taste differs from European concerning the decoration of chinaware for the table so that French factories that cater to American trade produce one style for us and another style for themselves. Americans prefer large areas of white, while Europeans like to have the entire surface decorated. Which method of decoration do you prefer? Why? Why do you think American taste prefers the restricted type of decoration?
- (3) Is hand-painted chinaware portraying things as they actually are desirable? Why? When is hand-painted chinaware good in design?
- (4) The figure on page 42 illustrates expensive decoration involving gold and etching; that on page 120 illustrates a less expensive method. In the former, there is a large expanse of undecorated surface; in the latter, there is a center decoration. Contrast these plates in respect to artistic values. Which do you prefer?
- (5) Do you like the textile designs used in the upholstering fabrics employed on the chairs shown on pages 57 and 58? Why? Which do you like best and why?
- (6) Compare the kinds and amounts of wood decoration in the Greek, the Chippendale, the Sheraton, and the Heppelwhite chairs shown on pages 56, 57, 11, and 130.

(7) On page 49 we see illustrated an inappropriate use of floral decorations. Why do you think this kind of decoration was abandoned in subsequent typewriters? (See pages 50 to 53.)

(8) How do you account for the almost total absence of surface decoration on the tools shown on page 44?

(9) Make a design, in color, for a china dinner plate. For a cup and saucer.

(10) Make a decorative design for a painted, circular, wooden box using a geometric motif or a conventionalized nature motif.

CHAPTER SEVEN

THE RELATION OF DESIGN TO MATERIAL

Important as decoration is in industrial arts design, it is of slight value unless backed up by dependable material. If an industrial product will serve no useful purpose or serve it ineffectively or if inadequacy of materials of which the product is constructed renders it fraudulent, pretending to be more than it really is, then the product must be pronounced not only a practical, but also an æsthetic failure; for in articles of utility, at least, what is not true to use is likewise untrue to art. Usefulness and beauty are the two primary tests of the worth of a design.

There are many varieties of wood, such as mahogany, rosewood, ebony, oak, birch, maple, and red gum, that are capable of measuring up to both tests; they are strong enough for furniture or decorative objects and dense enough in texture to take a fine polish, while they are at the same time adapted to a great range of color effect through the agency of stains. The designer may be sure that any one of these woods will prove worthy of his best efforts in constructive design.

The same rule of fitness for beauty and use must likewise be applied to other materials, whether metals for fixtures, tools, or household utensils, or clays for

pottery, or textiles for upholstery, for drapings, or for clothing. Everywhere, the first condition and ultimate foundation of artistic worth in a design requires that the material should appear to be what it really is; weakness or worthlessness should not be found masquerading under deceptive forms of strength or worth.

In the humbler walks of life sham ornaments take the form of imitation jewelry for the fingers, arms, ears, and neck; imitation flowers, fruits, and birds or feathers for hats; imitation furs and gems for clothing. With the newly rich and the well-to-do, sham ornamentation is not used as much as is the inappropriate and the ostentatious. This is especially noticeable in the furnishings of the home, which may consist of ornately decorated furniture, picture frames, rugs, silverware, hangings, and lighting fixtures. It may manifest itself in the accumulation of utterly useless articles of mere sentimental value, which are quite unrelated to one another or to anything else.

But why should good taste condemn sham jewelry, provided it gives the wearer satisfaction, as it evidently does? Is it not all "a matter of taste," about which it is vain to dispute? Is not each person's taste his own? To answer these questions, one must distinguish between vanity and a sense of what is beautiful, and he must recognize also the influence of fashion. The satisfaction experienced in the wearing of jewelry is not usually purely æsthetic. Savages and little children do indeed find beautiful that which cultured adults

know to be merely gaudy, but among civilized people fashion and vanity together make up a large part of that which might at first be regarded as a sense of the beautiful.

According to Herbert Spencer, the leading motives for following the fashion are: a respect or reverence for the person imitated, and a desire to assert equality with him. One would, presumably, feel like a gentleman were he clad in a gentleman's raiment, or a maid would assert equality with her mistress by imitating her jewelry, hats, gloves, and shoes, and the style and quality of her gowns.

In many parts of the old world peasants still wear a peasant's garb, but in a democratic country like the United States the descendants of peasants strive to obliterate every visible trace of class distinction. What more natural, then, than that the effort should be made to anticipate cultural equality by simulating an equality founded on cheap and shabby imitation? Again, pure vanity may lead one to prefer what is gaudy and pretentious to what is simple and beautiful. Do not paste diamonds glitter, and does not gold-washed brass have, for the time at least, the lustrous appearance of solid gold?

The disgust of the fastidious at sham ornaments and decorations is not always founded on æsthetic considerations alone but may be partly ascribed to the dislike of what pretends to be something that it is not. But whatever the complex of reasons may be, there can

be no doubt of the fact that people of good taste generally deplore the use of imitation jewelry and all the other shams of decorations in clothing or household furnishing. It is not so much that those happily situated in life object to those not so situated, making as brave a showing as possible, as that all judicious persons lament to see what is ostentatious attempt to take the place of what might otherwise be simple and beautiful. They deplore especially the waste involved in worthless imitations and substitutes, for there is nothing so expensive eventually as that which pretends to be more than it really is. The moral for the designer is obvious; sham material should be avoided, since enduring usefulness is the correlative of beauty in the industrial arts.

Some imitations that are at first disliked may, in the course of time, however, come to seem good and even commendable. An illustration is found in the familiar colonial architecture. In its early stages it was an imitation in wood of the stately Greek form built in stone. Even now it often gives one a queer feeling of inappropriateness to see tall, massive columns supporting nothing but a flimsy portico roof or grand openings that lead nowhere; but on the whole, the artistic pleasure that most people feel in a fine colonial structure in wood is well justified, and many details of the motifs for doors, windows, interior trim, and mantelpieces are exquisite in design and entirely consistent with the material of which they are fashioned.



HOTEL PONCE DE LEON
The walls are made of reinforced concrete.

Another instance of an imitation that began badly but has succeeded in becoming not an imitation at all is illustrated in the present use of concrete as a building material. Before the builders knew how to use it properly, they made bad imitations of cut stone by means of molds and block machines that turned out a concrete block usually eight inches wide, sixteen inches long, and six or eight inches thick, with smooth indentations on the face to represent the tool work on cut stone. The block, itself a pretentious caricature, was made worse by its uninteresting proportions so that when laid in a wall the inclosures resembled those made by children from toy building blocks. As soon, however, as architects began to treat concrete not as an imitation of cut stone but as a material to be handled in accordance with its own qualities, forms of beauty began to emerge. The Hotel Ponce de Leon at St. Augustine, Florida (page 142), with its walls made of poured concrete, is considered one of the most beautiful structures of its kind in the world, yet the marks of the planks out of which the forms were constructed are plainly visible on all the outer walls.

Another masterpiece of concrete construction that is sincere both in conception and execution is found in the museum building at Doylestown, Pennsylvania. It is constructed of reinforced concrete, that is, stone, Portland cement, and sand, strengthened with steel rods. The waterproof roof, about five inches thick, also of concrete, lacks waterproofing compounds that are

sometimes used in constructions of this kind. The roof, as well as the galleries and floors, rests on vaults rather than beams. The frames and sashes of the windows are of concrete and, while the sashes of small ventilators are made of wood, their frames are of concrete. The bookcases in the library are built in and are also of concrete. There is a large interior court surrounded by galleries to which concrete staircases of low treads lead. In order to allow for the varied sizes of exhibits which include vehicles and machines as well as implements and small tools, the levels of the floors vary greatly and there are numerous fireplaces. The windows were placed so as to get the most and best light. When the object of the building was attained, which was a matter of inside arrangement, then the pitch of the roof, the position of chimneys, and the shape of the mullions of the windows were considered from the decorative standpoint.

Concrete construction in the building of homes is already being superseded by stucco finish applied over brick, hollow tile, and even wood. This was at first doubtless in imitation of concrete construction, but the result is often pleasing and satisfactory, for stucco walls are fast developing their own means of expression as architectural material.

In a somewhat similar way, celluloid began as a poor substitute for ivory, but it has since assumed legitimate uses, which are characteristic of the material. Glass, paste, and quartz are sometimes used to imitate dia-

monds but always to the distress of those who expect honesty in goods as well as in men, though something can be said for synthetic sapphires, which are certainly beautiful in themselves even if they do resemble diamonds, rubies, or emeralds.

The Tower of Jewels at the Panama Exposition exhibited quartz jewels in a unique manner far from imitation. Who that beheld it can ever forget the effect of all that barbaric splendor! It was overpowering, whether seen in sunlight by day or by electric searchlights by night. One did not feel about that as about imitation jewelry, for there was no element of deceit in the spectacle. Each jewel was hung so that it could sway in the wind, and each had behind it a mirror to help it reflect its myriad gleams. Nature's only counterpart to this glittering display originated by man is found in the morning sunlight reflected and refracted from the trees after a New England ice storm.

Artists often point to nature as the great exemplar of beauty, and they regard the human body as the most perfect type. But even here the remark is not infrequently made that "beauty is only skin deep." If this were true of the face, why should it not be equally true of the veneered or plated silver spoon? Why bother one's head with the purely idle question of how the interior of a solid substance would look if only it could be seen? What shall be said of the artistic value of those objects of the industrial arts whose beauty of material is on the surface?

Whose joy at beholding a beautiful face is removed by a thought of how the flesh, blood, and bone behind the skin would look provided they were visible? Here we find need of a distinction. The beauty of the skin on a face does not even suggest a different structure behind it; or if it should do so in the case of a physician, it would be because the mind of the physician was for the moment directed to structures essential to the very existence of the face itself. There could be no conflict between the beauty seen and its essential, but unseen, structural support.

In the case of a veneer on a dresser, however, the precious wood on the surface at once suggests the cheaper material under it, for a veneer has a grain different from that found on solid wood. With this suggestion, thoughts and queries arise which, if not entirely æsthetic in kind, affect at least the artistic judgment. For example, is the object pretending to be more than it is? Is this veneering a device to secure the appearance of genuineness without paying the legitimate price? Does it furnish anything more than sham elegance? Will its superficial beauty be a joy forever or only for the brief period before the veneer begins to peel off?

The case is different when veneering is essential to good construction, as in heavy doors or large desk tops, and when plating is essential, as in silver knives. The doors and desk tops are subject to shrinking and warping if not built up after the manner of veneers, while silver knife blades have neither adequate strength nor

keenness of cutting edge unless the silver plating on the outside is supported by steel within. In all such cases, the beauty of veneering and plating is accepted for its surface value like that of the skin on the face.

Granted that, owing to the nonaesthetic influences that have already been mentioned, many persons see little of artistic merit in plated wares of any kind, yet there are certain other considerations that should tend to soften their antipathy even if they do not remove it entirely. Solid silver, for example, is expensive and easily marred or bent by careless handling, and, being valuable and easily converted into bullion, it is a temptation to thieves. Both of these liabilities are sources of anxiety to the possessor. Again, it is a not unworthy consideration with some that by using plated silverware far less unproductive money capital will be tied up. The best plated silverware will keep its plating for fifty years, at the end of which time re-plating will make it good as new.

The conclusion of this whole matter is that, whereas imitations for vain or gaudy display have little or no artistic merit, imitations and substitutes for practical use may be accepted at their artistic face value when they promote solidity of construction and when they spare their owners needless expense while promoting comfort and peace of mind.

When asked for his reasons respecting an artistic decision, the prospective designer may find it difficult to give any, except, perhaps, to say, "I like this" or

“I dislike that.” It will be of assistance to him, therefore, to include at this point a description of how the mind acts when deciding whether an object or a design is beautiful or not. The reader is asked to refer to the sauce boat shown below. The three stages of such a decision are probably about as follows:

1. The *spontaneous* emotional sense impression of pleasure or repulsion that one experiences upon be-

holding an object that may or may not be deemed beautiful amounts to a feeling of gladness in the beauty of the thing at first sight or a feeling of repulsion at its ugliness. The feeling is immediate and primitive, and it depends upon no



Courtesy of The Gorham Company

SILVER SAUCE BOAT AND TRAY
A fine example of modern decorative
construction.

thought process. Its language is an exclamation of joy or of disappointment, as: how lovely! how exquisite! how beautiful! or, how ugly! how distasteful! how repulsive!

With persons accustomed to expressing their feelings by their looks this instantaneous recognition of beauty or of ugliness is accompanied by a corresponding animation or depression of countenance. To test the validity

of this statement, present some product of unusual beauty to an unsuspecting subject and watch the expression of his face.

Some persons base all their artistic judgments on this first, spontaneous emotion so that their snap judgment becomes their final decision. Certainly an unerring sense of beauty or ugliness in products, which some persons undoubtedly do possess, must be considered a great convenience; but few people are endowed with such a sense. The large majority will be obliged to justify their first impressions or to alter their judgment with reasons. This brings us to the second stage in æsthetic judgments.

2. The *reflective* emotional sense impression requires an analysis of the factors that make the object appear to be beautiful or ugly. Confining ourselves to the Greek idea that the beauty of a thing comes from its inherent qualities, we apply the fundamental principles of design to the product under consideration as follows: Does its form accord with its purpose, containing all that is essential and excluding everything extraneous? Are the parts correctly balanced? Is its contour pleasing? Are the decorative elements in accord with the nature of the product and in harmony with its lines and masses? Is the whole an expression of a worthy ideal? Do the several component parts unite into a harmonious unity?

As we can answer "yes" or "no" to these and similar questions, our first spontaneous impression is deepened

and intensified, or it is negated; so that now we know, whereas at first we only felt, that the product was beautiful or ugly.

The two stages of artistic experience discussed thus far are purely æsthetic. There are other factors, however, that influence our decision as to artistic worth. These will be discussed under the next topic.

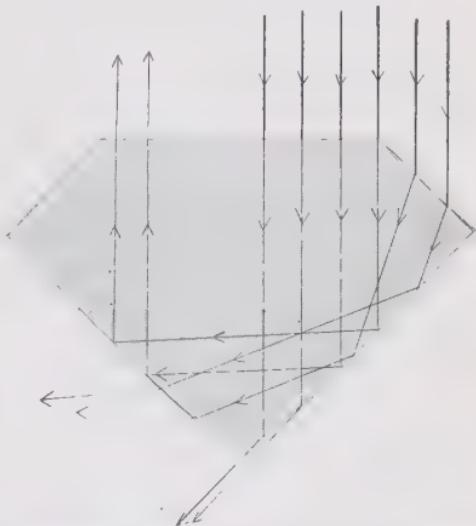
3. *Fashion* and the estimate of *intrinsic worth* are factors of emotional sense impression that are not necessarily æsthetic at all, for they involve such extraneous considerations as those of variety, novelty, genuineness of material, prejudice, and cost.

Three stages of artistic experience described above may be illustrated further by the mental reactions which we may suppose to be aroused at the sight of a gold ring set with a colorless stone in the show-window of a jeweler's shop.

At first sight the glitter of the stone, the soft gleaming of the gold, and the delicate modeling of the ring lead to the exclamation, "What a beautiful ring!" Further examination and inquiry reveal the fact that, though the gold ring is fourteen karats, the stone is a synthetic white sapphire, pleasing in appearance but lacking somewhat the brilliance of the diamond. The observer learns, moreover, that the stone is a product of the electric furnace, that it is as hard as the diamond, unchangeable, and more likely than the diamond to be flawless. But since it is slightly deficient in the chief charm of the diamond, the brilliant scintillating re-

lection of light, the judgment so far rests at the conclusion that this piece of jewelry, though possessing considerable merit, ranks lower in æsthetic value than would a similar diamond ring.

On further inquiry, perhaps, it is learned that synthetic white sapphires are often considered by some people to be cheap imitations of diamonds, that the cost of the ring and the stone is but ten dollars or less, and that if bought and worn, the neighbors will probably conclude that the wearer is trying to appear under false colors. Under the influence of these nonæsthetic considerations the desirability of the ring sinks so low that one may even forget that he has called it beautiful. Or he may reason other-

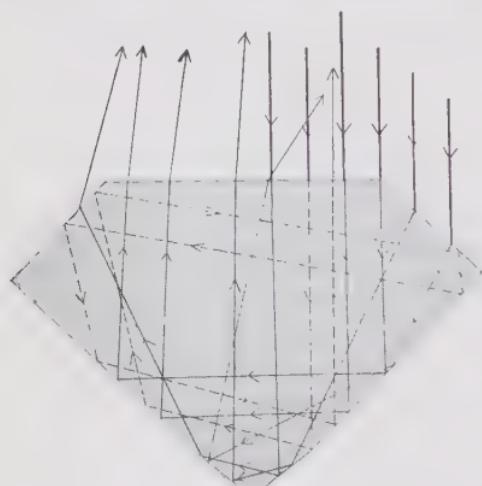


REFRACTION AND REFLECTION OF LIGHT RAYS IN GLASS

wise and purchase the ring; first, because it is within the limits of available cash, second, because it possesses permanent beauty even though not to the highest degree, and, finally, because no one for whose opinion he cares could possibly mistake a synthetic sapphire for a diamond or ascribe unworthy motives to the wearer.

We are indebted to the New York State Museum for

the following comparative study of the diamond and the synthetic sapphire which will make clear the real difference that exists between the natural and the artificial gems. The diagram (page 151) represents a piece of glass cut in the Brazilian form of diamond cutting. It will be noted that six rays of light are represented as falling on six different parts of the stone, and their paths may be followed by means of the lines. It will



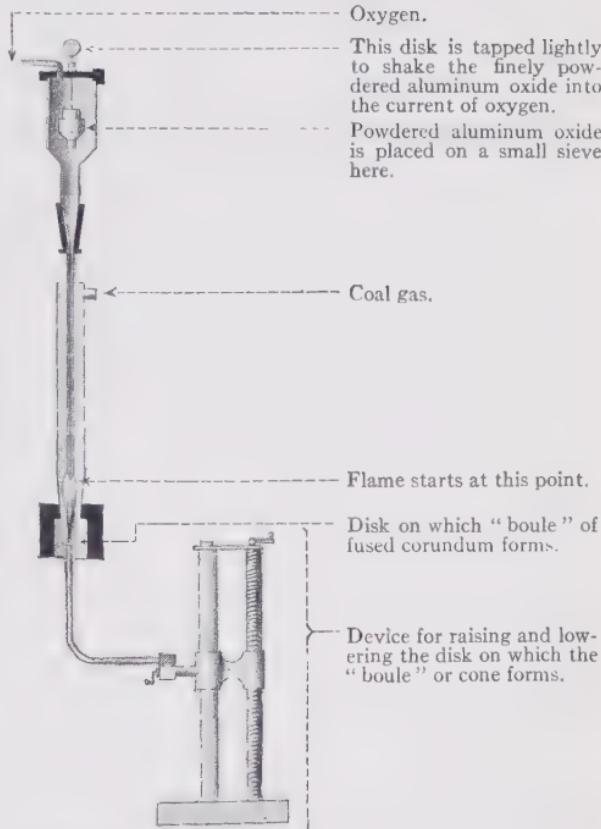
REFRACTION AND REFLECTION OF LIGHT RAYS IN DIAMOND

be noted further that only two of the six rays are sent back in the direction from whence the light is represented as coming. The second diagram (this page) represents a diamond cut in the same manner and with the light falling as upon the glass. Owing to the higher refractive power of the diamond, however, the light rays are reflected back from the interior of the stone, giving the brilliancy and sparkle characteristic of a genuine diamond. The refractive power of the synthetic sapphire is slightly less than that of the diamond, but it is far greater than that of glass.

Practically the only gems that have up to the present time been reproduced artificially on anything like a

commercial scale are the corundum artificial gems, commonly known as synthetic sapphires. These are made from powdered alumina into which a small amount of coloring matter is sometimes introduced to produce the color characteristic of the sapphire, ruby, oriental topaz, etc.

The apparatus shown in the cut on this page is that invented by M. Vermenil and now in general use for the making of artificial corundum gems. It consists of a vertical blowpipe which combines a jet of coal gas with a jet of oxygen, producing a hot



APPARATUS USED FOR MAKING ARTIFICIAL CORUNDUM GEMS

flame. Into the oxygen chamber is introduced a small sieve containing the alumina, which is sometimes mixed with coloring matter, both in powdered form. This powder is agitated on the sieve by tapping lightly

a small disk outside the apparatus, and the stream of oxygen is charged with the powder. The encircling tube carrying the coal gas terminates in a fire-clay cylinder under which the molten mass grows, supported by a disk formed of alumina inclosed in a collar of platinum. The fused corundum is built up in the form of a cone, or *boule*, as it is called.

The boules thus formed, although lacking any crystal faces, have all the internal crystal structure of the natural corundum gem and are identical with the natural stones in hardness, specific gravity, refractive power, and, in fact, all their physical properties. They are, consequently, when cut practically indistinguishable from the natural gems.

The distinction between spontaneous and reflective emotional impressions caused by the sight of a beautiful object is most useful in the appreciation of all products of the industrial arts. It is equally useful in the appreciation of painting, sculpture, and architecture, for every worthy product of art has behind it a wealth of emotion-charged thought, so that however great the first æsthetic impression of it may be, this impression will be deepened and enriched by subsequent investigation of the artistic qualities that aroused it.

Strict theorists are disposed to exclude from our sense of what is beautiful all influences of a nonæsthetic nature, such as prejudices against or in favor of fashion, opinions concerning cost or genuineness. Kant and his disciples would have us ascribe beauty to that alone

whose bare form necessarily pleases. But why supplant real situations by imaginary situations? The world of beautiful objects would be astonishingly diminished and distorted were Kant's definition of what is beautiful to be accepted and applied literally. Then fashion would have no influence at all upon artistic judgment; veneers of wood and washings and platings of metals would render the objects as beautiful as the solid materials; imitations would be the artistic equals of originals; sham and pretension, if only sufficiently concealed from view, would be deemed beautiful even though repugnant to the understanding, as though it were considered a perversion of taste to use the mind in judging the beauty or ugliness of things.

QUESTIONS AND EXERCISES

- (1) Is the beauty of a veneer, not required by good construction, sufficient to overcome the disadvantages that its use involves?
- (2) Enumerate some current devices for preventing iron and steel from rusting. Explain some of their economic and artistic advantages and disadvantages.
- (3) It has been an age-long problem of the chemist to find an alloy for iron that will free it from rust which ultimately destroys it. What artistic and economic results are likely to follow from the invention of "stainless" steel?
- (4) Bring to class small objects, such as bits of art pottery, statuettes, silver and glass ware, porcelain cups, pitchers and sugar bowls, articles of bric-a-brac, embroideries, samples of printing and bookbinding, fountain pens and inkwells, toilet sets, etc. Present them to the class one by one for examination and

discussion as to artistic merits as measured by the three stages in artistic judgment already presented; namely:

- (a) First spontaneous impressions.
 - (b) Artistic analysis, as explained on page 149.
 - (c) Examination of nonaesthetic influences that affect artistic judgment, such as fashion, novelty, cost, genuineness, worth of materials, etc.
- (5) Make a freehand drawing, in color, of an artistic object or a group of the objects discussed in 4.
- (6) Make a collection of pictures showing good and bad designs in small objects of the kind mentioned in 4. Keep these in a large envelope or mount them in a notebook.

CHAPTER EIGHT

HOME DECORATION AND FURNISHING

The artistic taste of the family is most completely expressed in the decoration of the home, where all members of the household are daily surrounded by manufactured things which exert over all its members influences for good or evil. It is within the power of each family to determine to a considerable extent what its home environment shall be. The present chapter will present some of the artistic fundamentals of home decoration and furnishing, considering in turn the floor and walls, the hangings, lighting, the furniture, and the harmonious combining of various elements.

We shall first consider the floor, which may be regarded as a part of the background of a room, since it serves as a basis upon which the whole decorative structure above it rests. The other part of the background is formed by the walls. The floors therefore should be regarded as decorative, but they should not attract the eye unduly. They should ordinarily be darker in value than the walls and ceiling, for the room might seem upside down were the floor lighter than the ceiling. The mind is accustomed to ascribe more weight to dark than to light objects, as we stand firm on the dark

and solid earth and look up into the airy and illuminated sky. A dark color is easily secured by staining the floor.

Even if rugs are used to secure the correct relationship between the floor and walls, it is still important that the exposed portions of the floor should accord both with the walls and with the rugs. Carpets belong, hygienically speaking, to the Middle Ages, when dust and disease germs were ignored. Rugs form a happy compromise between bare and carpeted floors, for they are consistent with cleanliness and at the same time they should contribute comfort to the feet and pleasure to the eye.

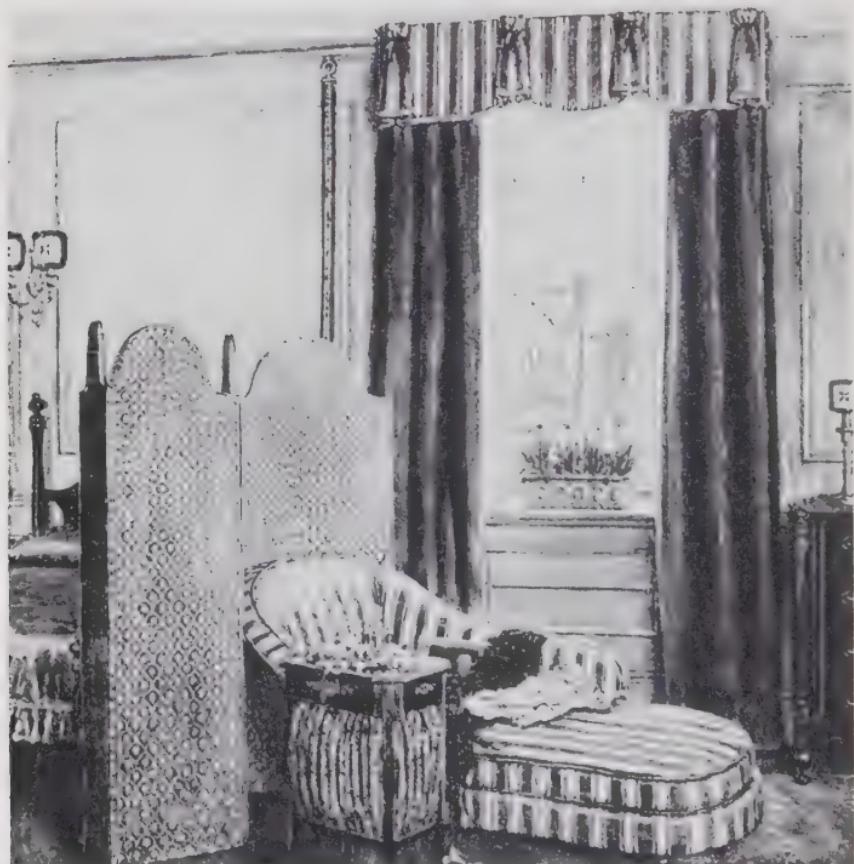
Rugs range in material from those made from rags to those of silk and velvet, but regardless of material they must always be considered a part of the decorative background. Obtrusiveness is always out of place in rugs. However rich in hue or texture, they must still be modest in color and unassertive in pattern, else what should be lowly becomes pretentiously exalted, for a decorative means should never become a self-asserting end. The floor is not the place for the exploitation of daring color schemes or for the exhibition of overpowering patterns or for the representation of realistic scenes. A rug is not true to its functions unless it gives a sense of comfort, refinement, and repose, and unless it falls naturally into its place as a part of the decorative scheme.

To the hangings belong especially the window drap-

ings and the portières, which are at once a part of the background and a part of the furnishings. They should in consequence always have color and they may or may not have pattern. The principle that must be observed here is that the color, while being harmonious with that of the trim and walls, should be of higher chroma than the adjacent background, for otherwise the draperies would be too tame and meaningless, and they would fail to brighten the window openings or to lend a new element to the decoration. There is a wide range of suitable materials — printed linens, cretonnes, silks, damasks, brocades, brocatelles. These colored and more or less opaque fabrics will of course hang at the sides of the windows during the day, since otherwise they would shut out the light, but they may be drawn together at night, when they will conceal the interior from observation from without and at the same time make it richer and more homelike in its cheerfulness and seclusion.

When the windows are moderately deep, it is usually advisable to hang inner curtains, which serve a double purpose; first, to relieve the window from the appearance of bareness, and second, to temper or subdue the light that on sunny days streams in from without. The inner curtains of net, lace, or casement cloth will naturally reach nearly to the sill, while the other hangings should reach almost to the floor (page 160). Portières should agree in line with the outer draperies of the window, else the unity of the background would be dis-

turbed; but they should in general be heavier and more opaque, since when drawn together they are intended to exclude observation. To do this successfully, they



Courtesy of Orinoka Mills

ARTISTIC WINDOW

The inner curtains reach to the sill while the other hangings reach almost to the floor.

must be heavy enough to withstand being blown aside by a slight draft of air.

As a decoration, a roller shade is usually negative;

it is at best a convenience that has to be tolerated, although it can be rendered less detrimental to the artistic effect by being rolled up and out of sight when not needed to exclude all the light. Fortunately, roller shades can be obtained in two or more colors, a dark value for the outside and a light value for the interior, thus making it possible for the shade to exclude the light, while harmonizing to some extent with the other hangings.

The subject of artificial lighting is more difficult to handle, for it must be recognized that artificial light does not distribute itself so evenly over the interior of a room as does the light of day and with distance rapidly decreases in intensity. This emphasizes the need for wide and comparatively even distribution of lighting fixtures for the general illumination of a room as well as the importance of concentrating light upon certain portions that especially need it either for practical or for decorative purposes or for both. Thus a picture, an effective grouping of furniture, or some bit of ornamentation will lose its decorative value at night unless it is properly illuminated; while there are articles of furniture, such as desks, pianos, chairs or tables for reading, writing, or sewing (page 162), or dining tables and sideboards, dressing tables and mirrors, kitchen sinks and stoves that need special illumination to assure their maximum utilitarian value.

Color is not the same in artificial light as in daylight. It is generally known that what is blue in daylight often

looks green at night; or the blue may be darker and duller by lamplight. This is similarly true of other colors. There is almost sure to be a difference in hue, value, or chroma, or in all three by artificial illumination; it may be for the better and it may be for the



Courtesy of Orinoka Mills

TABLE ILLUMINATED WITH SMALL PORTABLE LIGHT

worse. To this we may be reconciled, however, since we can do much to secure desirable color effects through the use of colored globes and shades. Any tint of red, yellow, blue, or green can be obtained in lamp shades of colored silk lined with white or colored silk. Variety in color effects is an artistic necessity, but it is a neces-

sity which may become an actual luxury obtained without added expense, since one color rarely costs more than another.

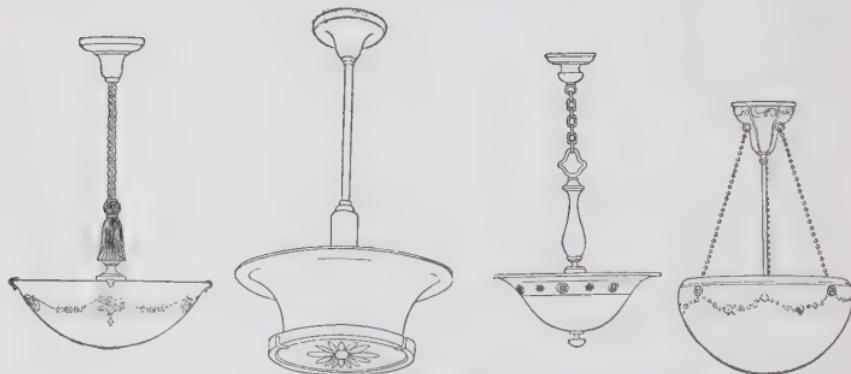
Though fashion at some times is opposed to art, at other times fashion favors the purposes of art, as is evidenced in the present disrepute into which the central chandelier has fallen. The chandelier is certainly artistically undesirable in the modern home, because it is a relic of the old palatial order when ostentatious display in the center of the large rooms was matched by elaborately ornamented walls and ceilings. In an otherwise modest American home the central chandelier, especially when it is large and elaborate, has an artistic effect far from desirable, and it also has the practical disadvantage of brilliantly lighting the center of the room only while leaving the far-away corners in semidarkness.

There are three methods of illumination: direct, indirect, and semi-indirect. The first is illustrated by the unshaded light. In the direct method the light itself is unshaded, and there is nothing to obstruct the glare.

Indirect lighting, a more modern illuminating system, which throws all the light on the ceiling from which it is reflected downward into the room, is more satisfactory than the central chandelier. The chief disadvantage of indirect lighting is that it illuminates most that part of the room which needs it least; it is also objectionable in that it is wasteful of the light. It attracts most

attention to that part of the room which counts the least in decoration; like moths, the eyes fly naturally to the brightest spots.

The semi-indirect system of centrally lighting a room is more satisfactory than either of the methods of lighting discussed (below). It is a compromise combination of direct and indirect illumination in which some of the light is diffused through a semitranslucent bowl,



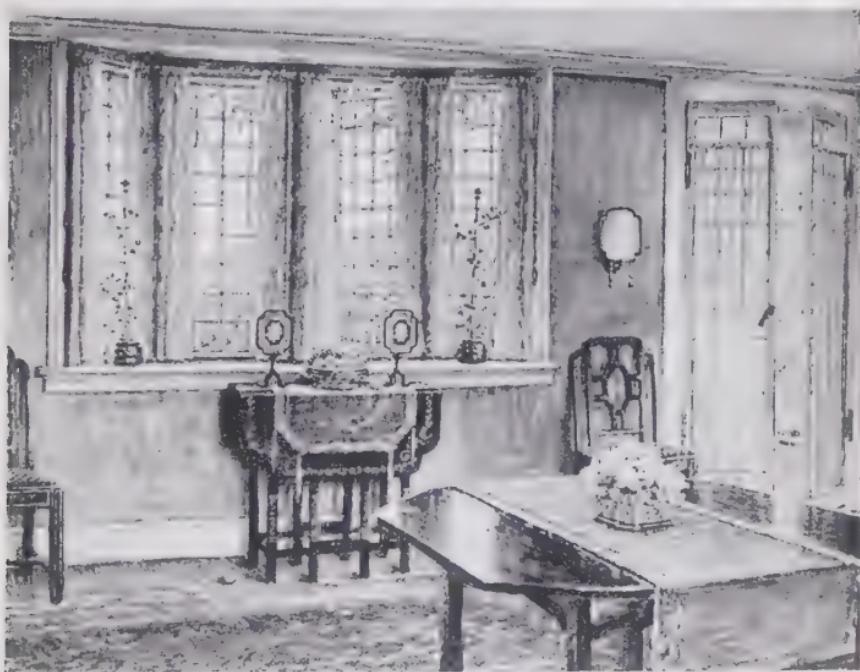
Courtesy of Edison Lamp Works, General Electric Company

SEMI-INDIRECT ELECTRIC LAMPS ADAPTED TO VARIOUS NEEDS

which also serves in some measure to reflect the light to the ceiling from which it is thrown downward as in indirect illumination. This system is more economical of light than is the indirect system.

Side lights are undoubtedly most appropriate in homes in which the rooms are not too large (page 165). These may be supplemented by floor lights arranged for the special illumination of decorative features and parts of the rooms set aside for utilitarian purposes. This distribution of lights naturally offers the greatest

number of possibilities for the artistic values, especially when the element of color is introduced in the form of neutralized hues of yellow, yellow-red, red, yellow-green, green, and blue-green, which are soft and pleasant to look at. The yellows and their analogous, or neighboring, hues have the greatest penetration. Tints of



Courtesy of Orinoka Mills

SIDE LIGHTS APPROPRIATE IN ROOMS NOT TOO LARGE

red are warm and cheering, but unless they are neutralized and subdued they may become irritating. The tints of green are soothing and pleasant; those of blue cool and restful. It should also be remembered that the luminosity of colors differs greatly, red standing highest in the chroma scale.

When the walls of a room are so broken by openings that a sufficient number of side lights can not be installed, general illumination can be accomplished by means of a centrally placed light suspended at the proper distance from the ceiling and equipped with



Courtesy of Edison Lamp Works, General Electric Company

PORTABLE ELECTRIC LAMPS ADAPTED TO VARIOUS NEEDS

a more or less transparent shade as in semi-indirect illumination. Where this does not furnish adequate light, it will need to be supplemented by such side lights as can be installed or by floor lights that can be moved about or by both (see above).

The problem of the selection and arrangement of

furniture is as complex as is the lighting problem, since it also involves personal taste and ideals, the disposition of lines and masses, making the old accord with the new, the need for harmony of color, an artistic regard for fashion and a courteous regard for the opinion of others, and, above all, the securing of artistic unity in the room as a whole.

Let it be assumed that most American families desire a home, not a mere dormitory with the addition of a kitchenette; but what kind of home? palatial and pretentious? domestic and substantial? social and cheerful? or secluded and cozy? Each family, helped or hindered by circumstances, must decide this for itself. Shall the home be all solidity, sobriety, and rectangularity, or shall it be all frailty and daintiness in curve and color? Shall it perhaps be attuned to mere heedlessness and gayety?

The normal home has in it the man, the woman, and the child, and it seems reasonable that the spirit of each should be appropriately reflected. That could scarcely be considered an ideal living room, for example, whose style of furniture compels the man to sit on chairs or davenports frail in structure and dainty in form, or which requires the woman to sit on chairs that are solid and rectangular in form and somber in color, or which puts undue restraint upon energetic yet somewhat heedless childhood. The boudoir and the sewing room may well be completely feminine, the den and the study completely masculine, while the nursery and the play-

room may be entirely juvenile. The dining room should be a happy compromise of all three. The living room may be adapted to adult visitors of both sexes, and it should have furniture in it peculiar to the needs of all.

The first principle of form to be observed in furnishing any room is that of structural unity. Most rooms are rectangular in plan, the floor and ceiling being at right angles to the walls and the walls at right angles to each other. Moreover, each of these planes is also in itself a rectangle. How shall rugs and the larger articles of furniture, like pianos, sideboards, bureaus, and davenports be placed?

If the edges of the rugs and the vertical planes of the various articles of furniture are parallel with the walls of the room, then there is structural unity between the furniture and the room; but if rugs, piano, tables, sideboards, and davenport are placed diagonally in reference to the rectangular floor space, then there is serious conflict between the fixed structure of the room and the variable arrangement of the articles of furniture in the room. Should some of the rugs lie diagonally while others lie straight, and should some articles of furniture be placed with their vertical planes parallel with the wall and the others diagonally, the confusion is made worse. This does not imply that no arrangement is artistic that is not arranged on parallel lines, but obviously there can be no structural unity in a room unless one principle of arrangement predominates (page 165). If the chief articles conform to the architectural lines

of the room, there can be no objection to tasteful variation in minor details, such as in the arrangement of chairs and small tables. Variation can also be effected through the arrangement of books, vases, and small ornaments in general.

Can curved lines and surfaces in furnishings be made consistent with the straight lines of the room? Round dining tables are offered for sale in all the furniture shops, as are also sideboards and bureaus with curved fronts, although there is a growing preference for straight lines and rectangular tops. It is possible for a round dining table to look well in a rectangular room since all other articles would presumably conform both in shape and position with the structural lines. A round table would look better in a room substantially square than in an oblong room, just as a circle inscribed in a square looks better than it would inscribed in an oblong. In the first instance there is the common element of equal diameters, but in the second the diameters are unequal. For similar reasons an oval in an oblong looks better when the long diameter of the oval is parallel with the long side of the oblong.

The principle of structure is frequently violated in hanging framed pictures on the wall. When a single long wire, attached to two screw-eyes, one at each upper corner of the frame, is used in hanging a picture it forms two sides of a triangle, which very often is the only triangle to be found in the room. Even if the wire is small, it is always more or less visible and out

of harmony with the structural lines of the room as well as with those of the picture. It is better to use two wires, that the wires may be parallel with each other and with the vertical lines of the room. Another method of hanging, which is quite as satisfactory, is to conceal the wires entirely behind the picture. Pictures should of course not tip forward into the room.

Another principle so obvious as to require no explanation is that the size of the larger articles of furniture should correspond to the scale of the room. It is possible for chairs to be too large for the space that can be allotted to them, but the chief danger of disproportion in size lies in such articles as tables, davenport, dressers, sideboards, and pianos.

A detailed study of such types as Italian, French, and English, beginning with the Renaissance, is extremely useful to the student in acquiring a knowledge of the essential characteristics of the various styles as revealed in what is commonly called *period* styles of furniture. Among the best of the many works on this subject are those of Benn¹ and of Eberlein and McClure.² These books are so fully illustrated that the careful reader can scarcely fail to understand and appreciate the characteristics by which the various styles are distinguished. An excellent summary of furniture styles is

¹ R. Davis Benn: *Style in Furniture*. Longmans, Green, & Co.

² Harold Donaldson Eberlein: *The Practical Book of Period Furniture*. J. B. Lippincott & Co.

found in Parson's *Interior Decoration*.¹ Only the barest outline of the artistic development of furniture can be given here.

The term *Renaissance* as applied to furniture means new birth, as of classic or Grecian ideals in various forms. The Renaissance style represents at its best what is strong and sincere yet luxurious in its classic simplicity. Directly or indirectly the Renaissance in its decadence is responsible for most of what is artistically vulgar and worthless in recent times, for its worst phases are found in the French periods of Louis XIV and Louis XV, and these styles have come down to us. Even the best of the furniture of the Italian Renaissance at its highest estate is suitable only in houses where everything has the aspect of classic simplicity, which is both elegant and expressive, and where it is combined with luxurious and decorative display. Such furniture would be fitting in the palatial residence but not in the modest home unless so adapted or modified in design as to lose most of its original objectionable characteristics.

Something of the good but much of the bad of Italian Renaissance furniture is found in the styles of the two French kings already mentioned. Both styles are ornate and pretentious though fitted to the royal residences for which they were intended. Eberlein says of the chairs of the period of Louis XIV that "they were instinct with dignity, being at first pompous and stiff, though acquiring in the later years more of grace and

¹ Frank Alva Parsons: *Interior Decoration*. Doubleday, Page, & Co.

comfort." He also tells us that "about the end of the seventeenth century a graceful cabriole form appeared." While the chairs of the period of Louis XIV frequently had straight lines in legs or arms or backs, those of the period of Louis XV had none at all but were profusely ornamented with striking motifs taken direct from nature.

The dominating spirit of both of these styles may best be comprehended when seen in their economic, political, and social setting. Practically nothing of this setting is found in the domestic American home. Before such motifs can be used successfully in America, they will have to be so modified and simplified that they will cease to appear to be grandiloquently royal and become just beautiful.

The period of Louis XVI saw the sensuous softness and elegance in furniture of the preceding reign displaced by a return to the simpler and more classic forms, and according to Parsons, "it marks the beginning of an understanding of the relation between the walls, ceiling, and floor and the furnishings of a house." This style can therefore be easily adapted to modern use.

Not much need be said, from the artistic standpoint, of the English furniture styles before the seventeenth century, for during that time there was little real furniture and less art. During the Stuart period, however, many Flemish workers came to England, and they brought with them two decorative ideas; namely, that of "twisted" wood and that known as the Flemish

scroll. Both of these are represented in the Jacobean chairs shown below. Not a little modern furniture bears marks of these influences, especially that employing twisted wood. Gate-legged tables date from this period.

The Queen Anne period, when England was dominated by Dutch influence, produced little of artistic



Courtesy of Metropolitan Museum of Art
JACOBEAN CHAIRS

value; for even when it adopted French motifs, such as the cabriole leg for a chair, it did so without manifesting any sense for delicacy of curve or nicety of proportion.

What may be termed the classic period in English furniture, confined for the most part to the eighteenth century, is represented by the works of Chippendale,

Heppelwhite, Sheraton, and the two Adams. That this furniture is still looked upon with favor in America is clearly shown by the fact that it has already entered upon a widespread renaissance. Reproductions and adaptations of it are copiously advertised in the newspapers and magazines. How long we shall go back to these styles for our ideals of beauty in furniture no one can tell. Whatever changes fashion or art may hereafter bring to pass, some of the ideals of the English classic period are almost sure to be incorporated in them, for among those ideals are to be found a number that are certain to be retained by a democracy that loves homes and beautiful surroundings.

Chippendale, the pioneer in this movement, stood first of all for independence and individuality in his productions (page 57), and he encouraged his patrons to determine for themselves the types that would best express their own individualities. He derived his motifs from many sources, Italian, French, Gothic, English, and, strange to say, Chinese; strange, because Chinese art was, in the main, the very opposite of European art and because social habits of the Chinese, such as sitting on floor mats, were utterly foreign to the customs of England. From the French Chippendale took much that was Greek or classic in origin; from the English he derived the ideals of simplicity and individuality, and from the English likewise he inherited the tendency to heaviness both in shape and line; while from the Chinese he derived forms of fretwork and the

characteristic decorations in lacquer, employing flowers and birds in color. Frequently the splats in the backs of Chippendale chairs were in Gothic fret. Both cabriole and straight legs were used, the latter sometimes decorated with the Chinese fret. On the larger articles of furniture the surfaces were usually left flat, decorated with Chinese or other motifs; sometimes they were curved, as in console cabinets and tables, sideboards, and chests of drawers. Round tables, either with cabriole or straight legs, were also manufactured under the name of Chippendale.

Of the modern furniture of the Chippendale type it may be said that from the large variety in structure, contour, and decoration found in Chippendale's own work, the lighter, simpler, and more beautiful forms have been preserved and adapted, so that if there has been a loss of the representative in type, there is, on the other hand, a marked gain in artistic values.

Heppelwhite, a contemporary of Chippendale, brought refinement in proportion and decoration to English furniture (page 130). His favorite maxim was: "Unite elegance with utility, and blend the useful with the agreeable." The old English heaviness, many evidences of which the work of Chippendale retained, was at last overcome by Heppelwhite, without unduly sacrificing strength of construction. The characteristic shield and heart-shaped backs of his chairs are features most fragile in appearance. That the construction was in general sufficiently strong, however, is

proved by the excellent condition in which specimens of his work are still found. Both straight and curved surfaces and contours are common in tables, desks, cabinets, and chests of drawers. The legs are generally straight, tapered, and delicately ornamented with flutings and small motifs of one sort or another. Often



Courtesy of Lenyon and Morant, Inc.

AN ORIGINAL SHERATON SIDEBOARD

This sideboard is made of mahogany inlaid with satinwood.

Heppelwhite's furniture was painted in white, greens, or grays, frequently relieved by gilding and by lines in various colors. Heppelwhite furniture is, on the whole, so refined in form and so delicate in decoration that it may even be termed feminine in character. It is to-day

best fitted for rooms in which the feminine is the predominating element.

The best characteristics of Chippendale and Heppelwhite were combined in Sheraton, who, like his predecessors, drew copiously on the classic elements found in the Italian and French styles. This is well illustrated in his chairs (page 13), but it is even more evident in his larger pieces, such as cabinets, sideboards, dressers, and tables (pages 176 and 177), in which he often surpassed both Chippendale and Heppelwhite. These articles of furniture, sturdy in construction, are at the same time artistic in form, decoration, proportion, and balance. Often the furniture was adorned by inlay in woods of lighter color. Sheraton is credited with perfecting the sideboard as we know it to-day; before his time it had been more or less indeterminate in design. With Chippendale and Adam this piece of furniture had consisted of a table flanked by two pedestals, which often sup-



Courtesy of Metropolitan Museum of Art

TABLE OF SHERATON STYLE (1790-1880)

ported urns for holding cutlery. Sheraton is to English classic furniture of the eighteenth century what Shakespeare is to the literature of the seventeenth century.

Modern furniture of the Sheraton type, stable in construction, yet delicate and refined in body and contour,



Courtesy of Metropolitan Museum of Art

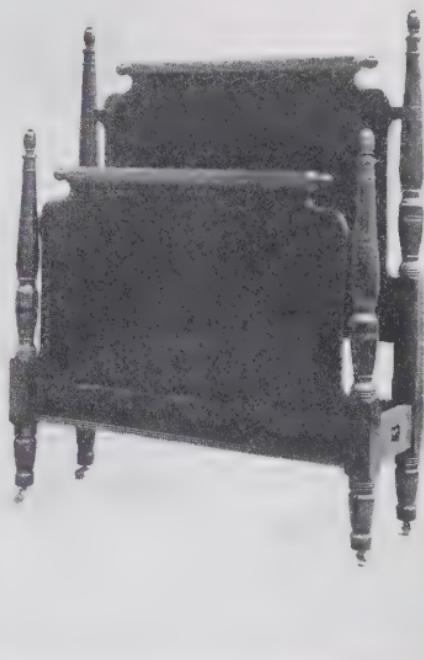
COLONIAL FURNITURE

and modest, yet beautiful, in decoration, is, therefore, well fitted for living rooms and dining rooms, being a compromise between masculine and feminine elements.

The Adam brothers contributed little that was new to furniture design, but they greatly improved walls and floors, helping to bring the background idea into the interior of rooms.

The inspiration for colonial furniture (page 178) so familiar to Americans was brought to this country from England and reflects many of its sources: in the North, Queen Anne and Chippendale; in the Middle States, Dutch; and in the South, Queen Anne and Chippendale with occasional leanings to Heppelwhite and Sheraton. In congenial surroundings, it is still highly prized when found in its best forms. Colonial furniture finally became quite characteristically American, and it eventually attained great merit as an American product distinct from the furniture of Europe. This figure shows a modern adaptation of the colonial style in a poster bed of inexpensive machine manufacture.

Mission furniture originating in the crudely constructed mission buildings of California became, with



FOUR-POSTER BED

This is a four-poster bed of modern construction, designed and executed by W. and J. Sloane, exhibited at the Fifth Exhibition of Work by Manufacturers and Designers. This design was based on the study of the collections in the Metropolitan Museum of Art.

the American public, a reaction from its inartistic predecessors of the black walnut "gingerbread" epoch of the middle and later decades of the nineteenth century. The mission style is now passing, but it still has many not ugly survivors in tables and chairs (pages 180 and

181), more refined in shape, and less massive in bulk than those that were at first in vogue. Living rooms and libraries still find their more masculine elements in these articles of the mission style.

It is no small task to reconcile the new and the old in home furnishing, the patrician and the



Courtesy of The Roycrofters
MODIFIED MISSION CHAIR

plebeian, the frail and the stout, the plain and the ornate, the painted and the stained, the gayly colored and the sedate, when they are placed side by side in the same room. A glance at page 114 will convince the skeptical that this can be done.

The furniture of most American households is the accumulation of years; those early years of limited means and inartistic ideals and those later years of

increasing means, developing taste, and chastened experience. Added to the indiscriminate horde gathered from miscellaneous sources, there is usually to be found some inheritance from earlier generations. Well-constructed furniture lasts a long time, and attics are limited in capacity, so that it is somewhat rare to find families that have not inherited their share of the furniture of the past. The problem of artistic adjustment is a double one, for it involves a reconstruction of what is already possessed and the assimilation of new elements that are added from time to time.

If one finally awakes to the realization that the furniture which he has through long association accepted as a matter of course is in reality anything but artistic, that it abounds in discords of color, shape, materials, and style, and that when judged by artistic standards it constitutes not much more than



Courtesy of The Roycrofters
MODIFIED MISSION CHAIR

an individualized junk collection, then the problem of artistic reconstruction begins to seem possible of solution.

In solving it we should begin as a physician begins with a diagnosis, trying to find out just where the trouble is, whether the discord is in color, in materials, or in styles. Or perhaps incongruity is produced by the juxtaposition of the unlike, as when ponderous pieces are placed alongside of frail ones, or when dull mahogany is combined with polished golden oak, or when painted and gilded chairs are overpowered by stolid mission construction. Or the chief difficulty may be a too profuse collection of unrelated and useless *bric-a-brac*.

The ailment may be of a more intangible and subtle kind, however, as when the rooms lack repose because no dominating purpose or ideal is apparent in them. If some of the pieces of furniture are somber and stately and others gay and even frivolous in spirit, how can there be an artistic unity when these types are placed side by side? If some of the colors suggest the gayety of the dance and other colors in the same room carry the spirit of mourning, how can such influences be harmonized? Does one group of things suggest the quiet seclusion and comfort of the home and another the impersonal air of the hotel or the dormitory? Does still another group flaunt the unsubstantial glories of the ten-cent store? Alas for artistic unity in such instances! Not reconstruction alone is needed, but also elimination.

According to the ailment so must the remedy be. Most such ills as those enumerated can not be cured by prescription; they must be remedied by artistic regeneration in the householder himself, who must be guided by a recognition of fundamental art principles. For families afflicted with too much bric-a-brac, William Morris's prescription still holds good: "Have nothing in your homes that you do not know to be useful and believe to be beautiful." The author of this admonition declared that were this motto really applied, tons of rubbish would be removed from our homes. The word useful need not, however, be too literally interpreted, since a thing is useful when it inspires genuine æsthetic pleasure no less than when it fills a material need; a beautiful statuette on the mantelpiece may be highly decorative if not jostled by incongruous articles. Vases of metal or pottery are also useful if they can and do, upon occasion, hold flowers. Bric-a-brac is inartistic when too profuse in quantity or unrelated in quality. A wise man once recommended that every family should install a treasure chest in some secluded spot, in the attic perhaps, in which sentimental accumulations of bric-a-brac can be stored and kept for examination in the leisure hours of rainy days.

A harmonious color scheme in a room is a wonderful unifier of what would otherwise be discordant. If the background is subdued and in accord with itself, then by means of upholstery, cushions, table covers, lamp shades, and the like, oak in the table may seem accord-

ant with rosewood or mahogany in the piano or with willow or grass in the chairs.

Sometimes the appearance of an inartistic room may be greatly improved by regrouping the furniture. Thus in a living room those chairs can be placed about the table that most contribute to the comfort and convenience of the family, while the more pretentious articles may be associated with the piano, forming a subordinate group. Even if distance does not in such cases actually lend enchantment, it does at least render the contrast between the pieces less noticeable and hence less objectionable.

Emphasizing the general spirit of a room often helps to unify furnishings; thus is obtained the atmosphere of comfortable and cheerful hominess of the living room, the good cheer and hospitality of the dining room, the formal yet friendly aspect of the reception or drawing room, the sedateness and quiet of the library, the personal and intimate character of the den and the boudoir, or the absolute individuality of the bedroom. Just as love of country makes possible an *e pluribus unum*, so the spirit of a room helps to unite its varied elements through the harmonizing force of a leading purpose.

Still another method of securing artistic unity in a room is by the acquisition of new articles to take the place of those that are discordant in material, color, or style. To do this successfully, the new articles must be selected or judged not alone by what they seem to

be when seen by themselves in the department or furniture store ; they must be considered with reference to their future associates and the home environment. Unless the buyer is gifted with an unusually good artistic sense and imagination so that he can see in the mind's eye just how a new thing will appear in an old setting, it is always safer to have it sent on approval.

Framed pictures in the home can scarcely be considered apart from the furniture, for when well chosen they are decorations as well as objects of virtue in and of themselves. As works of art, the pictures demand proper light, suitable background, and congenial surroundings. It is better not to hang a picture at all than to allow it to be obscured by shadow or by glare. The wall must not be a rival claimant with the picture for attention. A wall covering that is obtrusive in color or pattern may "kill" the picture, since it diverts attention from it. Should the wall covering chance to be artistically good and in itself an adequate decoration for the room, then pictures may become superfluous or even ostentatious. An oil painting or a good reproduction of an oil painting, especially a subject of large size, should have a section of the wall entirely to itself, or, if it must have neighbors, let them not be incongruous, such as water colors, pencil drawings, and reproductions in black and white.

To be a good decoration a picture must fit naturally into its place, awakening agreeable emotions by its presence but never arousing surprise. It must

make a decorative contribution by its presence; it may give dignity to a formal room, or a joyous touch to an informal room, or a gleam of light when illumination is needed, or it may fill with life and color a space that otherwise would be dark and uninteresting. A sharp distinction has already been drawn between pictures and mural decorations (page 119), yet notwithstanding this differentiation pictures may be used properly as decorations for interiors. In this case they serve a double purpose, for they depict objects as they really are or as they are conceived to be, and they also serve to enhance or complete the beauty of the walls.

In Europe painting was at one time primarily decorative since the paintings were applied directly to the walls of the palaces and cathedrals; it has never been anything but decorative in the Orient. Beginning with the Renaissance, however, the art of the painter gradually waned as decoration and developed as an independent or specialized art. In the early days the painter used his genius in expressing the spirit of his age as embodied in Church and State; since the Renaissance he has been chiefly employed and interested primarily in expressing himself. In other words, painting has become subjective or individual rather than objective and universal. DeFonseka in his book, *On the Truth of Decorative Art*, laments this change as decadence and pleads for a return to the art that was symbolic, universal, and decorative, and expressed in forms that everybody could understand.

However idle it would be to wish that the years would reverse their course, there are certain dangers and disadvantages connected with the art of painting as it is now carried on that should be mentioned here, because they have a bearing on the proper use of pictures in the home. The danger is that painting will become so detached from the life that most of us live that the products of this art will tend to find their only abiding places in the public museums of art. It will be agreed that any art is decadent which is detached from all life except that of the fortunate few who have wealth and leisure and a taste that has been professionally developed. It is, therefore, of the utmost importance for the vitality of painting that it should not be banished from the household even should the professional decorator be able to persuade some of us that his decorations of our walls are superior to those that we could obtain in the form of pictures, for, if pictures are no longer to be bought for the home, their only market will be found in the public and private galleries. If original paintings are too expensive, we can at least get good colored reproductions of them. Sepia or monotone reproductions of colored originals are seldom, if ever, satisfactory as decorations.

It will be difficult for the critics to convince us that our highly developed subjectiveness in painting and the other so-called fine arts is wholly bad and that we can restore a waning life only by becoming childlike, not to say childish, again. To be sure the artist may at

times become so extreme as to carry self-expression to the point of ineffability, when ideas merge into exclamations. Why should we find fault with the artist who writes into nature and life whatever he thinks he sees there, even though we should not agree with him? Our own great artists are great just because they seized upon and expressed the vital and universal ideals of human life and of nature.

Not all our art is so self-contained as is painting, as may be seen in architecture, landscape architecture, and sculpture. Think of the noble pieces of sculpture that St. Gaudens, French, Lorado Taft, Borglum, and a score of others have wrought for the enjoyment and uplift of all men! While painting is waiting in studios and galleries to be appreciated, we have at least one aspect of art that is detached from life only in so far as we will it to be so or disregard it through ignorance or indifference.

Art is free and abundant and an intimate part of our very existence. A glance through the literature of interior decoration convinces one that in the better sort of homes pictures are coming to be used sparingly in the more or less public parts of the house, as in living room and dining room, while in many homes they are omitted from the walls of these rooms altogether. The decorator often finds it practicable to finish the interiors of these rooms in so decorative a way that pictures would seem to be unnecessary if not detrimental to the decorative scheme.

Granted that walls may be so elaborately finished and so relieved by panelings, lighting fixtures, mirrors, book-cases, mantelpieces, doors, and windows that to hang pictures on them would seem like over decoration, does it follow that pictures should be omitted from the rooms of the home that are most frequented? In other words, are pictures in houses of the better sort ever superfluous? This question should be considered both from the standpoint of art and from the standpoint of the æsthetic pleasures of the household. It has already been pointed out that the art of painting has a strong tendency to become detached from the daily life of the people and its products to be assembled in public and private picture galleries. But if it is true that the painter's art is decadent to the degree that it has become detached from the sight and interest of all except a few people, then to banish paintings from the homes is indeed a calamity. If the art of painting is to survive, it must by no means be banished from the home.

Nor do the artistic interests of the household encourage such banishment. Even if the decorator is able to give a room all the beauty it can bear without the use of pictures, he can scarcely, with the resources at his command, find any adequate substitute for that which he would thus shut out; namely, the beauty inherent in fine pictures. Good painting has meaning or subject matter artistically expressed, and thus it gives rise to various kinds of æsthetic pleasures not aroused by mere color schemes or by harmoniously

divided areas. Even if we grant that the choicest original paintings can be afforded by few people, those that can be afforded or relatively inexpensive good color reproductions will open up to their owners that long-desired opportunity for intimate acquaintance so necessary for the assimilation of the inner spirit of a true work of art.

Moderation in the display of pictures in the home has all the virtue of moderation in other forms of decoration. Wearing too many rings on the fingers at one time is an evidence of defective taste; so, it may be asserted, are too many pictures on the walls of a room. We are too much disposed to count that picture lost whose face is not constantly exposed to view. Where a household possesses more pictures than can be hung to advantage at one time, it might be well to adopt the Japanese custom of successive display, using one or two subjects upon a wall for a few days, weeks, or months and allowing the others to await their turn. For, after all, is it best to allow a picture to hang always in the same place? If there is never any change, will not the inhabitants of the house ultimately come to ignore it altogether? When conversation becomes stereotyped and everybody knows just about what everybody else will say and how it will be said, then boredom is the inevitable result. Why should not an occasional new dress on the walls be as pleasant to the eye as a change of clothing for the body? Should the suggestion of displaying different pictures at different times be

adopted, it is recommended that the number of pictures to be hung at one time be limited and that variety should be secured by frequent rearrangement.

Where do family portraits belong? Manifestly not in rooms frequented by visitors, unless by their impersonality as works of art they become of interest to strangers. Nobody would have thought it inappropriate had Whistler displayed the portrait of his mother in his living room, for the universality of that work of art cancels the personality of the subject. In general, however, family portraits, being the most intimate of our pictures, should be reserved for the most private of our apartments, such as dens, boudoirs, and bedrooms.

What pictures, if any, are the most fitting for the dining room? Some decorators, as we have seen, find what they think ample justification for omitting pictures here altogether; for, by the time a dining room is equipped with china closets and sideboard, spacious windows and wide doors, there is usually little wall space left where pictures could be placed; furthermore, the table itself, with its linen, china, silver, glass, and occasionally a floral decoration, is the center of attraction, not what may be upon the walls. One should need no extra attraction for the eye, and, except for a cursory glance when entering the room, whoever thinks of looking at pictures while at the table or lingers to examine them? Again, the chief occupation of people while dining should be social discourse, joyous at times but always cheerful and interesting.

Granted that the dining room walls have a vacant space large enough for a picture and need some relief, nothing but a picture in harmony with what should be the spirit of the place would seem appropriate. Would it do to fill this place with a distressing scene? Certainly not, for such a picture in so far as it secured attention would tend to depress good cheer. Consequently, it becomes self-evident that representations of battles, earthquakes, storms, conflagrations, floods, and all other disasters and disagreeable scenes whatsoever would be out of place on the walls of the dining room.

Pictures that suggest food, such as fruit, game, and fish, may also be objectionable in that they may call attention to what the table lacks. When Colonel Mulberry Sellers was trying to make a dinner of raw turnips seem a feast by the charm of his conversation, he would not have been aided by pictures of fish, flesh, or fowl. Furthermore, that part of still life painting which portrays dead animals is not in itself particularly appetizing.

With portraits and family photographs confined chiefly to private apartments, and with the pictorial decoration of the dining room restricted to one or two appropriate paintings or reproductions of paintings, it is clear that the family supply of pictures must be distributed upon the walls of the other rooms.

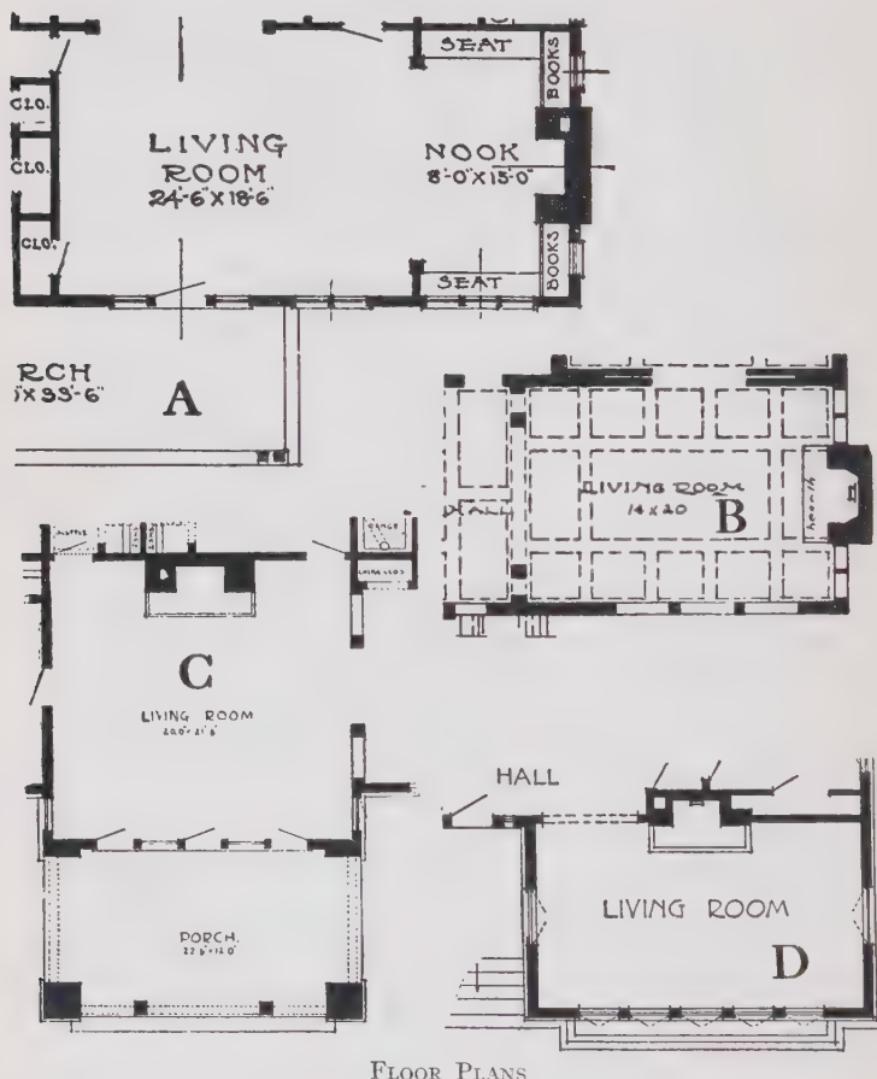
The problem of the artistic arrangement and hanging of pictures has two aspects: first, the number and

width of the spaces to be decorated; and, second, the artistic division of each of these spaces by the picture or pictures to be used. But the main concern is that of artistic space filling, for houses are planned primarily for convenience in use. The architect plans for good proportions in his rooms and for artistic as well as convenient placing of windows and doors, and the decorator must do the best he can with what the architect has given him to decorate.

Here are a few floor plans (page 194) showing how in living rooms the spaces for possible decoration vary according to the architectural details of construction. In *A*, the space above the fireplace is the only space on the east wall that could contain a picture. The only other wall spaces where pictures could be hung are the one above the seat in the inglenook and the one on the west wall. In *B*, the only available spaces of any considerable size are those on the right and left of the sliding door in the north and the one on the south wall. In *C*, the fireplace is placed in the middle of the north interior wall; the only other places where pictures could be displayed are on the west wall. In *D*, the fireplace is in the middle of the north side, on an interior wall. The space at the right of the fireplace is free, as is that in three corners of the room, together with the remaining space on the west end.

Spaces for decoration are defined by other than the vertical lines fixed by the architect's plans. They are fixed sometimes by the picture molding, which is placed

at varying distances below the ceiling. This forms a natural upper boundary for the picture space. Occa-



FLOOR PLANS

sionally the dining room has a wainscoting, which, if designed simply to protect the wall from the chairs,

will be placed at just the height of the chairs from the floor. In this case the wainscoting line will be the lower boundary of the picture space. In rooms where the wall space is unbroken down to the baseboard it is necessary to agree on some unmarked division line at a given distance from the floor to serve as the lower boundary for the picture space. It must be high enough so that there will be plenty of room for the chairs and other articles of furniture and so that the pictures cannot be disturbed by people moving about in the room.

The main problem, however, consists in placing the picture or pictures in each open space as defined by the vertical and horizontal lines referred to. When a given space is to contain but a single picture, the first thing to do is to find the middle vertical axis of the picture space, for it is with this center line that the vertical center line of the picture to be hung must coincide if a single picture is to occupy the space. The center lines can be found exactly by measurement, or they can be found approximately by eye. Then one must determine how high the picture shall be hung, taking into consideration the ease with which it can be seen and the equitable apportionment of the spaces above and below. Where the shape and size of the picture correspond to the space bounded by the vertical and horizontal inclosing lines of the picture space, observation shows that the space above and that below are usually related somewhat in the ratio of three to two, the greater dis-

tance being at the top. But it must be remembered that the eye is the final arbiter, and only actual testing and experimenting can determine what division is best for the size of the space, the size and shape of the picture, and the relative ease with which its details can be seen clearly.

When two or more pictures are to be placed in a given space, the problem grows more complicated and the question of balance confronts us with new difficulties. If there are but two pictures of unequal size to be considered, both might be hung on a vertical center line, while circumstances only could determine whether the smaller picture should be placed above or below the larger. If the pictures are to be hung side by side, then the problem of balance is still more difficult to solve, for, if the pictures are of unequal areas, the group will appear lopsided. The problem becomes increasingly complex as the number of pictures to be hung in the space is increased. Several small pictures grouped together may be made to balance a single large picture, or the large picture may be flanked by the smaller pictures.

Symmetry of arrangement is an easy method of securing balance in the arrangement of pictures on a wall, but it is not always the best method to follow. The smaller pictures may be grouped below the larger, care being taken in every arrangement to preserve the proper spatial balance. Yet one of the pictures may have more attractive power for the eye than the others,

and this must also be considered. Although it is recognized that rules are rather frail devices to lean on in the arrangement of things generally, the following suggestions will be found helpful in the arrangement of pictures, even if the rules themselves are subject to exceptions: (1) Pictures of equal size and of equal attractive power will balance at a point midway on a line drawn to connect their centers. (2) Pictures of unequal size will balance on a line drawn to connect their centers at distances that will be in the inverse ratio to their sizes.

The eye naturally seeks the center of balance for any group of pictures, and this center of balance should also fall on the middle line of the decorated space. Should it fall to one side of this middle line, the effect is unsatisfactory and hence inartistic. Moreover, the group should not be so arranged that the free space on one side is small, while that on the other is large. Formal rules will prove but poor guides when the number of pictures exceeds three. Here a good method to follow is to represent the space to be decorated by a sheet of paper as many inches or half inches in length and width as the space for decoration is feet high and wide. Then the rectangular, circular, or oval forms of the pictures can be cut from colored paper to the same scale to represent the pictures. The paper forms can be moved about until they seem to the eye to be perfectly balanced on the center line of the large piece of paper representing the wall. These can then be fastened with

paste and thus will be formed a pattern or elevation to be followed in the decoration of the wall.

When asked to recommend pictures for hanging on the walls of the home, a decorator sometimes finds it difficult to make proper selection, especially since pictures are an important means whereby the occupant may express his personal tastes and produce the effects that he desires on those who are to use the rooms. He often finds it difficult to interest his client in pictures that appeal to him. It will be of assistance to the prospective decorator and appreciator to present at this point a method of approach to picture interpretation, which implies at the same time the ability to make selections.

Briefly, the method of picture interpretation, which for want of a better name we call *sense appreciation*, consists in studying the picture by reading its story or meaning. This can be done systematically through memory, imagination, and reason. Sight percepts stimulate the memory and imagination in the field of the other senses also — hearing, taste, smell, and touch. A church steeple suggests the sound of a bell; sugar suggests sweetness; flowers suggest fragrance; the bark of a tree suggests roughness; and any or all of these percepts or memories or imaginings may suggest a larger emotional or intellectual experience of greater or less significance. The interpretation of all pictures depends, of course, on one's experience. The person who has never seen a mediæval castle, for ex-

ample, can not fully appreciate a picture of one unless through reading or conversation or both he may have gained an adequate conception of a castle by comparing its forms with those with which he is already familiar. There are pictures the fullest understanding of which requires information other than that which we are able, with our limited experience, independently to read into them.

When we have studied a picture in terms of the five senses (with the assistance of memory and imagination), we may be sure that we have read its story as completely and have interpreted it as skillfully as possible. If we consider a picture, consciously dwelling upon each of the senses in turn, we may be reasonably sure that, when we have finished with the five senses, we have concluded the story. Not until then have we a right to consider the technical side. What is Millet's *Angelus* without the sound of the bell, or a Corot landscape without the perfume of the flowers and the music made by the rustling leaves? Why must we always read the stories even of the simplest pictures as they have been written for us by others, when we might interpret them as well or better for ourselves? It is a poor picture that will not tell its own story.

It may be objected that not all the senses are brought into play in the interpretation of all pictures. The objection is good. Portrait pictures involve seeing primarily; landscapes involve hearing and smelling also, and not seldom all of the other senses. Few good

pictures will involve tasting to any great extent. Murillo's *Boys Eating Melons* and Bouguereau's *Girl Eating Porridge* (page 201) are good examples of pictures in which the sense of taste is a prominent consideration.

A sympathetic attitude is the prerequisite of appreciation. Knowledge will be of two kinds: (1) that having to do with interpretation and (2) that having to do with technique. The appeal will be made directly through the sense of sight, and the strength of it will depend largely upon the extent to which the visual perception calls up images in the fields of the other senses. For example, things seen may suggest geographical location, nationality, land formation, or a particular period in history. In the field of hearing, they may suggest natural sounds, such as sounds of the elements (wind and rain); sounds of animals, such as a bird's song, a dog's bark, or hoof beats; sounds of the human voice, as in singing or speaking or crying; or mechanical sounds, such as those of musical instruments, bells, whistles, or machinery in operation. In the realm of smell, they may suggest odors which will indicate environment, season of the year, or time of the day. In the sphere of touch, they may suggest texture, solidity, temperature, humidity, as applied to objects and the atmosphere; muscular activity and movement involving effort, fatigue, and rest. In the field of taste, they may suggest foods or medicines.

Moreover, associations with former experiences may



Courtesy of Cincinnati Museum Association

GIRL EATING PORRIDGE, by William Bouguereau

be called up by each sense in turn. In fact, we can interpret only in so far as we have learned through past experiences. Specific past experiences will come back to us, thereby rendering our interpretation more interesting and personal.

Let us now investigate the picture's claim to art, the technical side, by considering line and color, including dark and light, and applying the principles of rhythm and balance.

After having pursued the study to this point we should be thoroughly familiar with the subject. We should now be prepared to evaluate it with a view to accepting or rejecting it from the æsthetic standpoint. Is the picture a masterpiece, a real work of art? The following and similar questions should help in determining this: Is the subject a picture primarily, or is it a story? Does it explain itself sufficiently; would it justify itself without a name? Is it a great conception? Is it simple? Has it a familiar subject? Would its appeal be universal? Was it painted for all time?

I have before me as I write a small reproduction of Inness's *Peace and Plenty* (page 203). I can foresee that within these few square inches lie hidden from some eyes many thoughts which might take form in the mind could they be called systematically into consciousness.

I no sooner pick up the picture than I am transported to the country, from my little room with its ice-covered windowpanes to the harvest fields in



Courtesy of Metropolitan Museum of Art

PEACE AND PLENTY, by George Inness

sunny August, to fields of freedom and of plenty. Sheaves of grain lie at my feet, while but a rod away a couple of harvesters are engaged in conversation. They are taking time to rest for a moment from their strenuous labors in the sun. Other workers just beyond are cutting the grain. Farther away I can see a wagon heavily laden and ready to be drawn away. Beyond is a street winding off into the distance. But near the center of the picture, a little toward the left, is a group of elms which dominates the whole. The first of the trees stands alone, a commanding figure almost perfect in its symmetry. It is the favorite tree of my childhood. How I long to be among its branches with the breeze upon my face.

As I look off across the landscape, I become conscious of the magnitude of God's great out-of-doors. All is peaceful and still. But when I listen carefully in imagination, I can hear gentle music. A little bird way up in yonder elm is singing a delicious melody. He pauses, as I do, to listen. The "giddap" and "whoa" and the creaking of the wagon beneath its heavy load are all rendered harmonious by distance, while the voices of the workers come to me in the intervals between the birds' songs. The occasional click of the stone upon the scythe forms a pleasant accent. I close my eyes in order to catch every sound. Oh, the faint, sweet odor of that new-cut grain! I am going to guess the time of day. Four o'clock. I open my eyes to verify my decision by consulting the

shadows cast by the elms at the edge of the fields. How cool those shadows are! They have such a power over me, I am certain that eventually I shall yield to their call and after cooling off in their scattered light, take a dip in the stream.

The feeling of freedom which such a scene inspires is better experienced than described. One is at once content to be nature's child; his cares and responsibilities vanish. There has settled over the world a mantle of perfect peace and quiet.

I shall not attempt to analyze the picture from the technical side. Suffice it to say that it meets the requirements of art. The distribution of dark and light is excellent; we have in it an example of finely balanced attractions in which large, simple masses are properly disposed one toward another. If any changes in the disposition of these masses were to be made our feeling of rest, of satisfaction, of *peace*, would be destroyed, the unity of the whole would be lost. We find balanced areas as well as balanced values and balanced interests. As our reproduction is in neutral values, we can enter upon no further consideration of color.

Inness recites in *Peace and Plenty* the familiar story of the harvest; his painting is nevertheless in itself a thing of everlasting beauty, its beauty depending, for the most part, upon fine choices of line and of dark and light and upon simplicity of treatment. The picture will always appeal to men everywhere, particularly to Americans.

I have come to understand this picture by reading direct the message which it has for me. It may mean something different to you, but let your interpretation be genuine and I have no doubt that it will ring true. As for myself, I have decided that the landscape is a masterpiece in painting. I would like to have a good reproduction of it on the walls of my home because I am convinced that it should appeal to all who love nature, and nature is of course universal in her appeal.

A PROJECT IN HOME FURNISHING

(1) To obtain practice in applying the foregoing principles of artistic selection and arrangement, it is suggested that a group contest, limited in scope, be arranged for the class somewhat as follows:

- a. Two group leaders to be appointed by the teacher.
- b. Each leader to choose in turn a member of the class until all are chosen, first choice to be decided by lot.
- c. The first contest to be limited to the furnishing and decorating a living room for a family of seven, two parents, four children, and one other relative.
- d. The use of two similar rooms in or near the school to be secured for at least one week.
- e. Each room to be furnished as completely as practicable by the group to which it is assigned by lot with articles loaned by dealers or by parents.
- f. One week to be allowed for collection and arrangement of articles.
- g. The completed displays to be judged for their artistic merits of selection and arrangement in two ways: first, by a board of competent judges who shall be chosen by joint

agreement of teacher and group leaders; second, by the votes of the visiting public.

h. The extent to which the furnishing shall be carried and the definite points upon which it shall be judged to be determined by the teacher and the group leaders.

(2) Make a careful drawing, in color, of a group of objects in their "home setting."

(3) Reduce the drawing made in answer to (2) to poster form, adding such lettering as is necessary to make clear its message as an advertisement of the contest.

(4) Give an appreciation of Bouguereau's *Girl Eating Porridge* (page 201).

CHAPTER NINE

ART IN DRESS

In Webb's *Heritage of Dress* the opinion is advanced that the coat both for men and women can be traced back to the shawl, whether this was a rectangular sheet of cloth or a blanket made of skins. He says: "There seems not the slightest doubt that we can trace the coat from the shawl. A simple improvement in the latter is to join two edges of the shawl together and make a tunic. Such a tubular garment was used in Greece, and, with some slight modification, is worn by Egyptian women to-day. The garment originally came up to the armpits, was gathered up on each shoulder, and fastened with brooches. The next stage of development was a sleeved tunic. The material had only to be sewed together under the arms and, if necessary, to be cut into shape."

This seems an easy and natural way of accounting also for the rise of fashion in clothing, and there would seem to be no apparent reason why the development indicated might not have been run through in a generation. But things do not move so rapidly in the life of the race. The tunic, as an undergarment, appears very early in European dress, but the coat for men,

as we know it, was not worn in England until the eighteenth century. In the eighth century the outer garment for both sexes was a long, flowing cloak that usually reached to the feet and was fastened at one shoulder or in front with a brooch. It usually had copious sleeves, sometimes so long and flowing as to reach nearly to the ground. At one time during the fourteenth century in England the woman's sleeves were so long that they had to be knotted to keep them from sweeping the floor. Often, when convenience demanded, these long sleeves were slashed halfway down to enable the hand and arm to emerge. Sometimes the cloak was a mere blanket with a hole in the middle for the head, like a poncho; at other times this kind of a cloak was shaped somewhat to the form, especially at the shoulders.

Historically, fashions in dress have had many origins and developments, some of them not a little surprising. Here, for example (page 210), is a representation of a Minoan Snake Goddess from the island of Crete, dating from the sixteenth century before Christ. The original is a statuette in ivory and gold, six and one-half inches in height. The tight-fitting jacket reaches to the neck at the back but in front it is cut low; the skirt, which seems particularly modern, has five, plaited, gold-banded flounces and reaches from the gold belt at the waist to the ground. There are evidences that an apron was worn in front. The coiffure was encircled by a gold band. Holes in the lower edge of this band indicate

the attachment of gold curls. The sleeves are short and terminated by embroidered hems. Evidently the Greeks did not continue the Cretan development but began all over again. It is possible, of course, that this conception of a goddess represents an artist's vision, rather than an actual costume of the day. If



Courtesy of Boston Museum of Fine Arts
STATUETTE OF MINOAN SNAKE GODDESS

so, the coming costume certainly cast its shadow a long way in advance.

Not the least wonderful thing about the Greeks is the manner in which they contrived to produce artistic effects in dress with simple means. The figure of *Diana* (page 30) is an illustration. The undergarment is nothing but a large sheet thrown over the shoulders and gathered at the waist by means of a cord, which in

addition to holding the whole together also supports the loop that shows at the hip. The outer sheet is so arranged that it falls in graceful curves and folds on the left side, being merely caught together on the right shoulder by means of a brooch. So long as such a costume satisfied, there was no apparent need for further development. The result of this method of costuming was beautiful, and it is most fortunate that these people were so highly æsthetic that they were content to let well enough alone. Were their æsthetic accomplishments elsewhere all the greater because the artistic clothing of the body had ceased to be a problem?

Possibly we may find an explanation by considering briefly Greek ideals and the conditions under which these ideals found expression. These wonderful people seemed primarily interested in the development of a perfect body and the perpetuation of its beauty in marble; they were interested in physical training for æsthetic ends and in statuary and, next to this, in the building of temples for the honor and worship of their gods. It must be remembered, moreover, that when the Greek succeeded in worthily representing in marble a perfect human body he called it a god and housed it in a temple.

When a people has become obsessed by the notion of developing beautiful bodies, would it not be unreasonable to expect them to proceed forthwith to conceal or distort this beauty with clothing, the style of which was designed not according to art but fashion?

Again, though precious and beautifully colored textiles were not unknown at this epoch, yet the mechanical difficulties of weaving and sewing were not small. Thread for the weaving must have been spun by very primitive methods, for the spinning wheel of our own Puritan days had not then been invented. The weaving must have been done on simple hand looms. Needles and thread were crude affairs then and had small use since many of the costumes show no signs of their having been employed. Evidently the Greek women had not acquired the sewing habit in those days however much they may have spun and woven. Dyeing, too, must have been quite as primitive as weaving. The Greek climate, moreover, was almost semitropical, although there must have been plenty of inclement weather in the mountains, where undergarments would have been essential to comfort, at least at certain seasons of the year.

With such ideals and such climatic conditions prevailing, the Greeks could not consistently have consented to any fashion that would distort the body, for a distortion exhibited in marble becomes a monstrosity indeed, nor would they favor a garment that tended to conceal perfection and defect alike, so that no one could tell the difference between the perfect and the imperfect body. This would be quite like having a moral code in which vice cannot be distinguished from virtue.

The early European tunic, which usually reached below the hips, was in the course of centuries shortened

into a buttoned waistcoat, or inner coat, and has finally shrunk to the modern vest. Upon these garments, inner and outer, there followed, also in the course of many years, the refinements of collar, lapels, and cuffs. The petticoat was at first, as in the time of Henry VII in England, not a garment for women but a shortened tunic, or jacket, for men. About the waists of these petticoats was a short sash, or girdle, from which hung an elaborate purse or, occasionally, a dagger.

A skirt, divided and sewed to form two cylinders, long or short, marked the beginning of trousers, which in oriental countries were and still are worn by women. The close-fitting tights, or breeches, for men, often laced with thongs of leather or woven materials, are of very early origin. In modern times these garments have first been shortened into knickerbockers and then lengthened into trousers as we know them to-day.

As to color in costume, men rivaled or outdid the women in the gorgeousness of display immediately preceding the nineteenth century. Since the French Revolution, clothing for men has gone into mourning, as it were, while the men have gone into business. They had to lay aside the gorgeous display of a leisured aristocracy in order to get the greatest economic advantages of an industrial age. When the whole world has at last become economic and democratic, may we expect that the women also will molt their bright and varied plumage to such an extent that there shall be seen on the streets only the solemn brood of care in somber garb?

The modern shoe developed from a simple heelless sandal of wood, leather, or cloth to protect the sole of the foot. The early shoes were fitted carefully to the shape of the foot. Later and for many centuries

they were long and pointed, the extension being often stuffed to keep the shoe in the desired shape. Heels, for the most part low but sometimes high, came into vogue in the sixteenth century.

The hat has evolved from correspondingly simple origins; perhaps at first it was just a small shawl thrown over the head or an upward extension of the cloak to form a hood. From the tenth century to the



Courtesy of Metropolitan Museum of Art

FRENCH, CHARLES VI, COSTUME
(14th Century)

fifteenth century the wimple was in common use. This was a long band of light material, often white, wound repeatedly around the neck and then arranged on top

of the head, with or without a low crown or cap, and then left to trail across the shoulder or down the back. During the same time, headgear for men varied from the hood formed at the back of the cloak to low or high caps or hats, often ornamented with plumes. The middle ages saw many fantastic variations of these forms both for men and for women.

In modern times there has been a well marked evolution in dress, which has followed the stages in the development of thought and social consciousness among the people. This evolution has doubtless, like the evolution in the



Courtesy of Metropolitan Museum of Art
FRENCH COSTUME OF THE TIME OF LOUIS XVI
(about 1775)

natural world, been more or less closely connected with survival of old forms on the one hand and with natural fitness and convenience on the other. Within the stages of progress there seems to have been abundant scope for pure caprice such as in the width or narrowness of skirts or of sleeves, the high or low position of the waist band, the natural or the constricted waist, the

presence or absence of hoops and bustles, the high or the low heel of shoes, and the shape and the material of the hat. Pages 214 to 218, inclusive, give an idea of a few of the styles that have prevailed since the fifteenth century.



Courtesy of Metropolitan Museum of Art

THE FARTHINGALE

A French costume of the time of Henry IV,
about 1605

However satisfying a fashion may be while it is in vogue, our final judgment of it must be founded not on how well it pleased its wearers but on how well it pleases us from the standpoint of its intrinsic qualities of beauty. Here we feel the need of historical perspective in the judging of fashions, for genuine beauty is often obscured by usage. We must learn to ask: Is this

article of dress inherently beautiful or ugly because it conforms to or violates some permanent principle of art? If it is ugly, it must be rejected or altered that

it may be artistic. Even last year's fashions may look queer to us because they are different from the newer forms, yet this is no proof that they are not beautiful.

In Paris a fashion originates in the spring of the year when, by conference, a general type of garment is hit upon for the following season. Each prominent sartorial designer, say a Worth, a Callot, a Paquin, a Jenny, then proceeds to modify this type enough to impress upon it some peculiarity of his own that may be recognized as a sort of trade-mark (page 219). In this way an ordinary type of dress with perhaps a dozen minor modifications goes forth to be copied by manufacturers who are to clothe the millions that are sure to adopt it. This general type may be inherently beautiful, or it may be inherently ugly; but, artistic or inartistic, it will have its day; if particularly appro-



Courtesy of Metropolitan Museum of Art
BURGUNDIAN COSTUME (about 1539)

priate to the body and pleasing to the eye, it will recur again and again, with just enough variation each time to give it the semblance of novelty; if inappropriate to the human body and obviously ugly, as soon as its vogue declines it will descend into the oblivion of forgotten distortions, never, let us hope, to rise again.



Courtesy of Metropolitan Museum of Art
ENGLISH COSTUME OF THE MID-VICTORIAN
PERIOD (about 1858)

ing in the study of sartorial art as represented in painting and in historic records. French designers of costumes are, moreover, exceedingly adept in the ingenuity with which they create wholes from the shreds and patches of the good features to be found in the

To the French is sometimes ascribed an unusual amount of native artistic talent. Whether Frenchmen possess this or not, France certainly does devote an extraordinary amount of attention to the artistic phases of education, and she, of all nations, has been the most diligent and painstaking

popular styles of former times. To this end all other countries have been made to contribute. It takes real creative genius to put a new spirit into the old forms, whether the artist is a Shakespeare with his pen or a Jenny with his shears.

The problems of dress design are not solved when the costume is in itself beautiful, for no style, however inherently beautiful, can possibly look well on everybody. People differ in age, in complexion, in height, in breadth, in weight with respect to height, in lines, and in carriage; there are corresponding differences of disposition or spirit, involving such characteristics as gravity or lightness, seriousness or frivolity, alertness or indifference, the air of business or of sport. Besides all these variations there are those that arise from culture, occupation,



Courtesy of Corticelli Silk Company

A JENNY COSTUME
(Released in March, 1923)

and economic status. Every aspect of personality, whether physical, mental, or social, calls for individual adaptation of every fashion. Adaptation is, therefore, the real problem for the wearer, for it is the only problem with which the individual can deal. Every individual must face this problem squarely if he is anxious to make fashion serve beauty; a slave to fashion is a sinner against art.

Since the closing decades of the eighteenth century, when science and invention began to revolutionize textiles in color, pattern, texture, and, above all, in cheapness and consequent availability, fashion has been extended from classes in society to entire populations. In America, fashion may be said to be almost if not quite universal. In Europe the costume of the peasant was exclusively his own, and it changed but rarely, and then in minor details only. It served to distinguish and set him apart from his social superiors, so that his status in life was at once obvious to all. The upper classes loved purple and fine linen, and they also had some regard for novelty. (Even changing dynasties often left essentials of fashion, like the long, flowing garments for men, and devices for concealing the hair of women, unchanged for generations.) Before the nineteenth century, therefore, fashion was exclusively for the nobility and the rich; it called for lavish expenditure, but its garments were slow to change, and they were often simple and beautiful.

With the advent of the machine and the application

of scientific methods in industry came the rapid growth of populations and their concentration in cities, and with these changes came the consequent rise and development of democracy. Industrialism called for more workers and more consumers in spite of the fact that machinery greatly increased the amount of work which one man could do. Science and invention at the same time provided for more rapid and more extended means of transportation and communication, so that food might be brought from the ends of the earth and surplus populations might find new homes in distant realms of boundless though undeveloped resources. It was because of these forces that the peasant and the workman of Europe became the freeman and the land-owner in America. But when men become free and prosperous, they grow independent and self-reliant, hence democracy and all that democracy implies.

The universality of fashion is one of the æsthetic aspects of democracy, for in a democracy everybody considers himself as good as his neighbors, at least in so far as artistic privilege is concerned. Consequently the descendant of the peasant, instead of retaining the garb of his ancestors, becomes ashamed of it as a badge of servitude, and he welcomes the opportunity to adopt as best he can the styles of dress worn by his economic superiors.

It is rather common to deplore the influence of commercialism in the domain of fashion, as it leads to needlessly rapid and consequently expensive changes,

and its craze for novelty often tends to replace the beautiful by the ugly. Pessimists are even disposed to declare that commerce has made fashions more numerous and more hideous, since an ever increasing demand for novelty gives commercialism its opportunity, and depraved or undeveloped taste causes many thoughtless individuals to regard every transient mode as beautiful.

But there is also an optimistic standpoint from which to view this matter. It may turn out that what has been regarded as an evidence of decadence in costume is only an index of evolution and that the chief difficulties are personal and psychological rather than mechanical and commercial. For in the world of fashion as it applies to clothing, we have to consider first of all the power loom on which the fabric is woven. It is the loom that guarantees quantity and relative cheapness, and it may also guarantee superiority in quality. Anyone inclined to doubt this statement should visit any dry-goods store and examine the marvels that have been woven on these modern machines, fabrics that exceed even the fondest dreams of the craftsman who formerly worked on a hand loom.

Can it be that the supposed decadence in costume is due in any degree to the fact that our textiles of to-day are more beautiful in texture and color than they were ever before in the history of the world? Can it be ascribed to the sewing machine which enables the manufacturer to supply any demand however large? Our forefathers got along very well with the hand needle,

which could not supply the present demands of millions. In the early days brunettes were taught to avoid all colors save yellow and blue, and blondes were told to choose only green and red — a poverty of advice due to a poverty of colors. Modern science has given us dyes that come near to exhausting the possible nuances of color, and to-day any woman may wear any color she pleases, if only she selects colors of the proper hue, value, and chroma and uses them in correct amounts or areas. Science has, indeed, made our color world not poorer but rather incomparably richer than it was.

The abject surrender of the majority of people to whatever fashion pronounces to be the correct thing is not a mark of decadence but only a stage of a movement forward, from which we must doubtless emerge at last into complete artistic independence. Why is it that the cultured women of America are said by distinguished critics of Europe to have better artistic judgment than the women of any other nation? Is it not because they carry their self-respecting independence over into the domain of costume? The number who reach this stage of artistic advancement and independence appears to be growing rapidly, not only through the increase in wealth but chiefly through the influence of art instruction in and outside of the schools. This tendency is everywhere encouraged by woman's increasing consciousness of her worth and importance in every department of life.

It is safe to predict that in the near future, millions of men and women in America will rise to entire artistic independence. They will be seeking answers to such questions concerning artistic values as are here raised, and they will, like the present-day leaders in art, find answers which, if not always final, will at least be valuable in solving the artistic problems of everyday life. The individualization of fashion is so broad that it concerns every human being; it pertains to industry, to science, and to education, as well as to art, and it involves much of the happiness and prosperity of every individual and of every home in our land.

We have seen in an earlier chapter that fashion may be expected to arise in any useful article whose form is relatively independent of its functions; but why is it that fashions which once changed but infrequently now change so rapidly that we may expect radical alterations at least once a year and minor changes quarterly? Why is it that lace is the only element in woman's wear that is valued for more than a single season, while man wears absolutely nothing from top to toe that may not be given or thrown away as soon as its freshness and style are things of the past?

The answer would seem to lie in the fact that what people most desire in their clothing is freshness, cleanliness, and, above all, novelty. It is repugnant to modern taste to wear anything that is mussed, soiled, or in general is suggestive of dirt or microbes. People rapidly tire of a garb that is ever the same; monotony

has become the bane of dress satisfaction. Our garments must be new or they must appear to be new. It would seem, consequently, as if the ideal were to wear a garment once and then to discard it for one that is newer. However, we must satisfy ourselves with a slower change. This ideal has in it, nevertheless, a lesson which should be of the greatest value to all. The proper care of clothing is of the utmost æsthetic value.

It takes no discerning eye to see that the modern ideal of newness, interpreted literally, is a menace to art in dress, for it maintains that even the inartistic is endured, if it may be quickly discarded. Besides, if a thing can be sufficiently striking in its novelty, the question of whether it is beautiful or not can be postponed to a more convenient time. The longer a thing is to last, however, the more need there is that it should be artistic. Who does not sigh at having to discard a garment that has been particularly becoming?

Cleanliness and novelty are highly to be esteemed; so are beauty and longevity. Where is the artistic balance between these qualities to be found? Shall we say: Give me the clean and the novel, and let beauty go hang? or shall we say: Give me first that beauty of costume which will make the passer-by think of the charm of my appearance rather than the fashion of my clothes?

Although a regard for fashion is inevitable, the desire for beauty is eternal (page 226); the inevitable and the eternal must somehow be reconciled, but to show

why and how at this point would be to anticipate the succeeding paragraphs in which these matters will be



Style Service Syndicate

AFTERNOON DRESS OF AMERICAN DESIGN (1923)

discussed at length. Are fashions in dress æsthetically desirable? Would it conduce more to general artistic appreciation in the industrial arts if women, like men, were to adopt a purely conventional garb having as much beauty as possible but with only such variations as special occasions, such as holidays, weddings, or times of mourning, would seem to dictate?

Dress has at times been prescribed, as by Quakers and other religious orders, and it is not unreasonable

to ask if it would be a gain for beauty if prescription were made universal. Could there be any æsthetic advantage in such a fixed order for costume? One, at least, may be suggested; we should ultimately cease to subordinate the person to the costume, as we do when fashion dominates the individual and raises the query, *Is it in style?* as opposed to the reasonable question, *Is it becoming?* We might as well abridge the loss to beauty, which arises when the fashion itself chances to be ugly, and that more common loss that comes when the fashion produces an appearance of the ugly in the wearer. This reasoning would hold good when the fashion fails to fit, as it generally does when used without discrimination in taste. A fashion to be truly beautiful must not subordinate the wearer to itself, else the dummy in the show window might serve to display it better than the human form. In other words, a dress should deviate from fashion just in so far as the beauty of its effect upon the individual demands this change. Why not, then, abolish fashion altogether and have all individuals dress alike, or why not let each person dress as he pleases without trying to imitate the others?

But, after all is said, would there be a gain to beauty if fashion were abolished? It does not seem to have been the case with the men, who have at best attained nothing but drab indifference in so far as color and form are concerned. Complete individualism in dress would produce a result akin to that which would obtain

in the realm of manners were each to be a law unto himself. There would be a plenty of manners, but the manners of some individuals would be atrocious.

Were a fixed mode of dress to be prescribed, the effect would be to diminish greatly the incentive to produce a beautiful result. However great the individual's appreciation of beauty as such, comparatively few of us ever try to create beauty by practicing the profession of the painter or sculptor; but where is the woman who does not daily think of her appearance and strive to improve it through costume? So long as this æsthetic interest is kept alive and active just so long is there hope that time and education will rescue all mankind from the ugliness that comes from the unthinking worship of fashion or the equally depressing influence of personal indifference to what is becoming. A new fashion is a new challenge for the creation of beauty in the person of the one who adopts it.

Was it because fashion had not then decreed the constriction of the waist that no Greek statue ever represented the figure deformed by tight lacing? Were there no other reason this would have to suffice; but there is another and a better reason, for it never occurred to the Greeks that art could evolve beauty from ugliness. That fact being granted, why is it, then, that fashion can cheerfully proceed to do what art would never wish or dare to attempt; that is, to distort the human figure in order to produce some novel effect that she fancies?

With fashion, beauty is always second to novelty. Fashion regards beauty as desirable but not so essential as are new and striking effects. Furthermore, it seems to be the rule that as soon as fashion produces a deformity she proceeds to conceal it by some device of costume or to glorify it by giving it social éclat. In the case of "the golden lily" or the Chinese artificially deformed foot, the social distinction that went with it gave the mother courage to inflict and the little daughter the resolution to endure the physical torture that was incident to it. The customs of flattening the head, of tattooing, of the enlargement of ears and lips by weights and skewers, of the blackening of teeth, among barbarians, not to mention the constriction of toes by pointed shoes may all be explained in a similar way. What fashion inflicts in the cause of social distinction must be endured by flesh and blood.

Are the constriction of the waist and the artificialities of the costume that must be invented to conceal the deformities that it causes gone forever, or may fashion some day be expected to revive them? Who can tell? It seems futile to revile them in the name either of art or comfort. As long ago as 1366, Petrarch thus burst forth with vituperation in the name of art: "Who can see with patience the monstrous, fantastical inventions which people of our times have invented to deform rather than adorn their persons! Who can behold without indignation their long, pointed shoes, their caps and feathers, their hair twisted and hanging down like tails,

their bellies so cruelly squeezed with cords, that they suffer as much pain from vanity as the martyr suffered for religion!" It is indeed futile to protest,

For Fashion still can work her will,
Though saints or devils rage.

Yet for all that, there is hope ahead, for changing ideals of comfort and health and beauty are more potent than remonstrance. The shifting vagaries of fashion, or the growth of Greek athleticism or the free outdoor life or the new ideals of womanhood or modern knowledge of physiology or new conceptions of beauty — one of them, some of them, or all of them put together have made the wasp waist and its accompanying mask, the crinoline, seem undesirable to the girls of our own times and their mothers, so that art, health, and fashion for once agree. That they will continue to agree we may at least hope. Certainly there are many powerful influences at work in American life that will tend to prevent a reversion to the earlier unesthetic and unhealthful practices.

Next to the waist, the foot has been subject to the greatest artistic and hygienic abuse, sometimes of the toes, sometimes of the heel, and sometimes of both. There have been times when the French heel, invented in the seventeenth century, was higher than it is to-day, but not much. Is there anything about the high-heeled shoe that one can admire? Of course there is. Resting in the shop window, it may be regarded as a triumph of art in leather. Its whole con-

tour is dominated by curved lines of beauty, while in texture and finish it is exquisite. When viewed by itself as a decorative feature for a costume it is perfection. The narrow toe is a model of daintiness and delicacy. Furthermore, it is recommended to many eyes by the fact that it appears to be several sizes smaller than it actually is. But there is something else to be considered; namely, the health, comfort, and carriage of the wearer.

Since this discussion pertains to the artistic more than to the hygienic, it will not be necessary or appropriate to enlarge upon the effects of the high-heeled shoe upon health. It stands to reason, however, that in compressing the toes into a narrow compass and thickening the instep and the arch, one is seriously deforming a very important part of the anatomy, reducing the power of locomotion and endurance, and promoting the formation of corns and bunions. The most serious charge against the French heel concerns not so much its physical as its æsthetic effects, for it impairs the naturally graceful poise of the body when standing, as if one being barefooted should always stand on the toes and the balls of the feet; and it is marring to gracefulness of motion when walking, as if one should always walk on the balls of the feet and yet assume to be graceful in movement. When the high French heel comes in, then queenly poise and grace of movement go out.

The choice is, therefore, between beauty in a shoe

and beauty in the poise and motion of the body. We can not have both at the same time. Each person must decide which is better, one of the greatest elements of beauty with which nature has endowed man, or a pretty article of wearing apparel that impairs or actually destroys it. Probably most girls who wear high-heeled shoes are not aware of the æsthetic price they pay for what seems to them smart and distinguished. It is just another example of beauty in the dress obscuring beauty in the wearer.

But are low heels a guarantee of graceful walking? One seems to recall visions of slatternly movements in slippers. Of course, low heels are not a guarantee of grace in the wearer; but there is just this difference between the effects of wearing high and low heels: with high heels grace of movement is practically impossible, whereas with low heels it is attainable for all who care to cultivate it. A promising compromise is found in the growing disposition to distinguish between footwear for indoor social occasions where the high heel is supreme (page 238), and that for tennis, golf, or tramping where the low heel and wide-toed shoe prevail. Will not the business woman adopt the latter? What more distressing scene is there than that of hundreds of young girls clumping along the streets at the close of the working day in high-heeled shoes in which they have endured who knows what tortures during the long hours of standing and walking?

It is reported that the Chinese have forbidden the

binding of the feet of young children in order to produce the golden lily, but it can scarcely be expected that the American people will carry prohibition to the point of forbidding footwear that distorts the foot and destroys grace of movement, first, because there are so many violators of nature's laws, and, second, because the matter is only remotely ethical. The root of the difficulty of bringing about any widespread reform is, it may be surmised, the fact that we so rarely see our neighbor's bare feet. It was different in the good old days of Greece, when the sandal alone clothed the foot. Who knows but that the Trojan fathers were looking at Helen's feet when they declared that her beauty was sufficient recompense for all the pain and waste of the Trojan War.

If fashions that disguise the natural beauties of the body or that tend to deform its physical structure are to be avoided, those, on the other hand, are to be commended which, while conserving modesty, reveal or accent its æsthetic values or conceal its artistic defects. The question is how can fashion be best controlled by art principles in the service of beauty? This question has already been considered on its negative side, but prohibition of the ugly is quite a different matter from the positive encouragement of the beautiful.

Dress is a means, not an end; its purpose is to adorn the body, not to obscure or belittle it. It is a better compliment to be told that the wearer herself, rather

than her dress, is good to behold. When the style is made the end, the wearer becomes merely a movable model for display, but when the wearer is made the center of æsthetic interest, the first spontaneous pleasure which comes from the sight of beauty, is a tribute to the wearer rather than to what is worn. The second or reflective aspect of artistic appreciation includes the clothing, but it will not ignore the wearer.

Simplicity, elegance, and beauty are always in fashion, in the highest sense of the term, for an artistic dress is never out of date. This may be deemed by some a debatable proposition, but it must be remembered that the beautiful is eternal; therefore, a costume that in line, color, and texture completely satisfies the canons of art is always an artistic costume. For an illustration of this, consult the masterpieces of painting in all ages, for the art of costume is reflected in the painting and sculpture of all periods.

Here we seem to come upon a clash of ideals; newness, cleanliness, and novelty with their corresponding transitoriness *versus* inherent beauty, perfect adaptation to the individual, lasting quality of materials, and excellence of construction together with their corresponding longevity. Which shall it be, a costume for a single season or for a number of years?

Much can be claimed for each ideal. Thus cleanliness is surely indispensable, while novelty, if duly controlled by the principles of design, certainly makes for interest and may be made to promote artistic striving;

but it is very easy to forget all about art if novelty is constantly to be exalted. On the other hand, some fashions are more becoming to one individual than to another; therefore, it seems desirable that we should adhere to what is truly becoming rather than to rush to that which may prove unbecoming. Again, even though the manufacturer has well-nigh displaced the dressmaker, at least for many classes of garments, is it not an unjustifiable extravagance to discard a garment before it has rendered in fair measure the service of which it is capable?

It is the privilege and the duty of every woman to select from among the fashions those that become her best and to adapt what she has chosen to her individual needs, because a fashion is admirable only to the extent to which it is becoming to the wearer. Our obligation is due to beauty, not to mode, beauty of person being the end and the fashion only a means for promoting it.

It is interesting to see how the foregoing artistic opinions appear to M. Worth, a French sartorial artist of authority who wrote three articles on artistic dress for *The Royal Magazine* a few years ago. "Beware of a fashion that *dates* a dress, for such a garment will soon begin to look queer; to evade such dating, moderate extremes such as those of length, of breadth, of narrowness, or volume. Remember that repose in dress is as desirable as repose in manner. Eschew the rage for novelty; it defaces beauty and empties the purse.

Select the fashions that best fit your needs, as the Puritan collar for the soft, round throat, the Medici collar for the stately woman in the heyday of life, the Tudor ruff for the neck that is ageing. Correct minor defects by the details of dress; thus, if one sister be tall and another short, a large hat might become the tall girl and bury the other. A large woman should not wear a tiny hat; the feather boa is for the tall girl, as well as the big Pierrot ruffles that frame so well the swanlike neck; a coat of three-quarter length would not cut a tall figure in two, as it would a short one. It is easier to make a long waist look short than it is to make a short one look long; a short girl should not accent her shortness by wearing an empire dress belted beneath the arms; let the short, squat girl try the effects of flowing skirts untrimmed and unstriped. The princess dress is becoming to the short girl with a trim figure, while the little woman should choose it for her wedding gown; refrain from bargain sales—they lead to bales of useless goods, to ruined flowers and draggled plumes. (Should we not rejoice that at last the birds are allowed to wear their own plumage?) Abjure the *dernier cri*, the latest thing, for it is not worth your notice; finally, robe yourself prettily, daintily, tastefully in a manner in keeping with your position and the occasion,—that is enough."

"And wear good clothes." There's the rub! How is one to get them without the means? Obviously, no prescription for dress will increase a bank account,

yet it may enable one to dress better on the means available. It is indeed expensive to bask in the light of the extremes in fashion. If beauty of effect is superior to novelty, beauty of effect is likewise more economical ; it is a fact that beauty of dress is economy's best friend. Why should the lasting beauty of a Greek vase be considered seriously if the beauty of a dress is rendered lamentable provided it must be worn for a considerable length of time ? One goes not to the fashion plates of past generations to find beauty with which the people of former generations adorned themselves, but to the masterpieces of painting that hang in the picture galleries, for art, not fashion, rules here. Nobody suggests painting new dresses on old portraits to bring them up to date. As they were created so they remain, and the dress designers of the present day, when they search for ideas, study the old portraits more than they do the old fashion plates.

The first effect that a thoroughly becoming gown has upon the wearer is to make her want to keep it. When we shall convince ourselves once for all that this desire is in accord with good taste and artistic good sense, then, and not until then, will economy and beauty become allied. Apparel which is undated, because unblemished by the extremes of fashion, admits of slight alterations or the addition of minor accessories which enable the wearer to render it ever as timely as it is becoming.

For the encouragement of those who are disposed to



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adopt this view, M. Worth assures us that many of the most artistically dressed women make it a rule to order but three new dresses a year. Such a program is consistent with art because each new dress must be of good materials, of artistic design, and perfectly adapted to the wearer. Under such conditions a dress is to some extent at least a permanent acquisition — perhaps not so lasting as a good piece of furniture, but agreeable to wear in the best dressed circles even for a number of years.

This, then, is the designer's message to all who would have the best clothes for the least money: Choose good and beautiful materials; prefer simplicity in design; insist on perfect fit; and finally, be sparing of decorations. Though there is still some merit in the poet's ideal that when beauty is most adorned it is adorned the least, yet this notion needs qualification before being too rigorously applied. It is true that beauty of figure, of feature, and of complexion is sometimes so marked that decorations seem superfluous; but even here it is possible for decoration to make that radiant and adorable which before was simply correct and pleasing. There are generally two important obstructions in the pathway; the first is that such beauty is rare, and the second, that it does not last long. It is futile to try to avoid the issue by denying its existence; decorations in dress still have the power they have always had; namely, that of improving or of marring the appearance of the wearer.

Comparing our own times with the earlier ages, it may be said that for beauty of effect we depend less on decoration and more on artistic shape and

color, weave, and the material of the textiles themselves than formerly (see Figure). Whereas, before the Industrial Revolution both men and women were lavish in their display of the purely decorative features of costume, modern dress, like modern articles of utility in general, now finds its greatest artistic merit in form and material rather than in mere ornamentation. This evolution, if it may be considered as



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SEMI-FORMAL DRESS OF AMERICAN DESIGN
FOR YOUNG GIRL (1923)

such, has in the case of men's clothing been carried to the point where shape and material are almost everything, and decoration next to nothing. Woman's dress is, generally speaking, tending in this direction, but

it has not yet reached the goal. Is the tendency desirable?

Materials were once lavishly decorated with patterns woven into the fabric, as in brocades, or adorned with elaborate and profuse embroidery, usually in silk but sometimes in gold or silver. In trimming, lace and braid, the latter usually in gold, were freely made use of in the costumes of both sexes. Then there were ribbons and sashes, and fringes and tinsels, and, in the more costly costumes, even diamonds, rubies, pearls, and a host of jewels of lesser intrinsic values. For the neck there were collars and ruffs; for the sleeves, elaborate cuffs and shining buttons.

No other single element of costume was so given over to decoration as was the headgear in the height of its glory; for here feathers, lace, and jewels reigned supreme with the nobility, while with those of modest means, glittering spangles disputed the sway of more costly artificial flowers. Rings set with precious stones glittered on the fingers and sometimes on thumbs; pendants hung from the ears and from chains that encircled the neck, while from the shoes there came the gleam of silver, gold, and jewels. That was indeed an age of resplendent decoration in dress; its gorgeousness will doubtless never be restored, for the conditions that gave rise to it have no counterpart in a democratic, beauty-loving America. Ideals have changed, and with them the canons of taste in decoration.

We now shun the profuse, the obtrusive, and the

pretentious ; we prize the simple, the dainty, the elegant. With us the genuine is preferred to the spurious or the artificial, the fixed to the flapping, the rich to the gaudy, in design. "What would be fair must be fit." This holds for decoration of costumes as it does for all other articles of utility, and fitness must be judged here as there by prevailing ideals and situations, by status and occasion, by time, place, and circumstance.

One writer laments that there is to-day in man's dress absolutely nothing worth preserving when the garment as a whole is worn out, and he bewails the fact that there is in woman's garb nothing but lace and jewels in which age is regarded as respectable. He asks if this short list of things worth preserving might not be somewhat extended, as in buttons of unique design, gold or silver or platinum buckles, trimmings of precious materials and artistic design, ostrich plumes and silken scarfs.

Of man's participation in the world of color it has already been intimated that his glory lies largely in the past. Even the British soldier once marched to battle in a scarlet coat, but now protective coloring is the rule, for he has reached the conclusion that safety comes before martial splendor.

Compared with that of the past, modern fashion prescribes even for women a somewhat sober and reduced humility, though the shades of winter naturally brighten into tints under the warming influence of the summer sun.

Why is it that brilliant coloration in dress is left largely to the young? Is it because developed intelligence has lost interest in the beautiful or because the sobriety of work indoors is inconsistent with the gayety of pure color or because the Puritan's moral earnestness interpreted "glad" apparel as an indication of frivolity that we seek to bleach out the hues and reduce their attractive power? There are not a few evidences that we are approaching nonaesthetic coloration as we advance in civilization.

The starting point for color in costume is unquestionably the complexion, for, do what we will, this is the chief factor in the problem. Even if we would, we can not become oriental in our tastes, since we lack the uniformly dark skins that render half-nakedness tolerable, and gaudy color admirable. In spite of all that athletics and cosmetics can accomplish, our complexions are not, in general, a matter of pride. Look about on any street or in any gathering of individuals and you will see how various and undesirable the average complexion is. Perhaps, if every human being were absolutely healthy, there being no active or chronic disease or hereditary taint, the skin of every person would be smooth and perfect in texture and beautiful in color and the features fine though infinitely varied. Yet even in this case complexions would be of all tints, from cream and rose to the many tints and shades of brown, because our population constitutes a most composite race.

The American woman, especially if she is young, may wear any hue she pleases provided it is correct in value and chroma and used in the proper quantity or area. Furthermore, a color naturally inharmonious with the complexion may be rendered less objectionable by a mediating band of a neutral or neutralizing color, such as black, gray, white, or gold.

On the adaptation of colors to age, M. Worth offers the following: "While, roughly speaking, white is for everybody, mauve for the very fair, blue for the brunette, I would add that age should be circumspect in a decision as to color schemes. With white, black, gray, and purple at the command, why should the woman of sixty insist upon pink, which is certain to make her appear years older than she really is? Pink is for youth; green, too, is a trying color except of the fresh complexion with plenty of color. In certain gradations of shade and in some lights it makes a white countenance, which purple would frame most beautifully, look ghastly in the extreme." One can not help recalling the effect of mercury light upon the complexion, making the victim look as if he had just emerged from the tomb.

It may be regarded as self-evident that the various parts of the costume should be in harmonious agreement among themselves, as well as with the complexion. Here one has but to apply the principles of color harmony as already explained, modified, of course, by personal taste. But there is more than color to be considered if the harmony is actually to be satisfying, for

materials must be in accord and the whole costume fitted to its place and its occasion. A princess gown, a sun-bonnet, and a pair of tennis shoes would not make a harmonious costume even if the colors were consistent, since three such discordant elements could not well be brought into any kind of artistic unity. It so happens that articles of apparel for the body, the head, and the feet come from at least three designers instead of from one, so that the problem of harmonizing all devolves on the wearer. The hat must accord with the complexion and also with the style, color, and materials of the gown, and the shoes with both. What is true of the main elements of the costume holds likewise for all accessories such as gloves, hose, collars, furs, and jewelry.

Must beauty in clothes be reserved for the street and social functions but ignored in bedchamber, living room, and kitchen? Any homemaker who would start out on such an assumption would make a fatal mistake. She should always appear beautiful to the rest of her household. If she is a slattern in her home, it will not help much if she becomes a doll on parade. Her motto should be : beauty always, but beauty fitted to time and place. Fortunately even those who buy all of their clothing ready-made can meet this condition by the use of artistic judgment. It should be against one's aesthetic instincts to think of using threadbare drawing room or street finery in the kitchen or when doing housework. What then is to be done?

The answer is : search the shops for the right things.

There is a correct costume for every occasion. One is delighted now and then to find in some display window a garment intended for kitchen or chamber that satisfies every artistic requirement for such a dress. It may cost but three or four dollars and yet quite surpass artistically a fifty-dollar gown intended for evening wear.

Work is sweetened and dignified when the worker is fittingly yet artistically dressed. Every costume should be becoming, especially since all that is necessary to its existence is the taste that demands it. In a democratic society every woman is called upon to perform diverse services, but there should be no division in her attitude toward the beautiful, for beauty should be the joyous attendant of all our enterprises.

QUESTIONS AND EXERCISES

- (1) Do you think fashion in dress desirable? Why?
- (2) Discuss briefly the following as factors in fashion: novelty, imitation, commercial interests.
- (3) Distinguish between decoration and decorative construction in costume.
- (4) Do you consider the puffed trimming on the Jenny model illustrated on page 219 appropriate? Why? Do you think the rosette of ribbon appropriate? Why?
- (5) Of what use are museum collections of costumes in the development of taste in dress?
- (6) How may the following qualities be best expressed in dress: refinement, dignity, individuality, utility?
- (7) Should temperature, season, or fashion set the time for wearing straw hats or furs?

(8) Prepare a portfolio of good modern costumes for men and for women, mounted artistically on suitable paper stock cut $8\frac{3}{4}''$ x $11\frac{3}{4}''$. These may be taken from magazine and newspaper advertisements. (Directions for making a suitable portfolio are given in Winslow's *Elementary Industrial Arts*, The Macmillan Company, 1922, pp. 43 to 46.) Design an appropriate cover for the portfolio the title for which may be *Art in Costume*. Each plate should have an artistically lettered legend, or title.

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